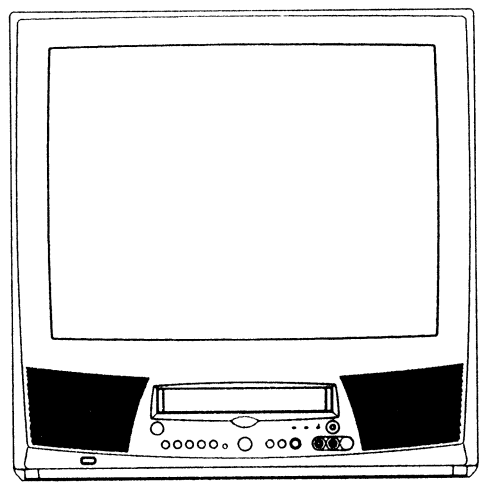
SERVICE MANUAL

COLOR TELEVISION/VIDEO CASSETTE RECORDER

ORION COMBI 5504VT/SI



VHS
PAL

ORIGINAL
MFR'S VERSION A

Design and specifications are subject to change without notice.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]
If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]
External exposure metal: Antenna terminal
Earphone Jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)
1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

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GENERAL SPECIFICATIONS

G-1	TV System	CRT	CRT Size / Visual Size		21 inch / 508.0mmV
			CRT Type		Normal
			Deflection		90 degree
			Magnetic Field BV/BH		+0.45G/0.18G
		Color System			PAL
		Speaker			1Speaker
			Position		Front
			Size		3 Inch
			Impedance		8 ohm
		Sound Output	MAX		2.5W
			10%(Typical)		2.0W
G-2	VCR System	System			VHS
					Player / Recorder
		Video System			PAL
		Hi-Fi STEREO			No
		NTSC PB(PAL60Hz)			Yes
		Deck	DECK		OVD-6S
			Loading System		Front
			Motor		3
		Heads	Video Head		2 Head
			FM Audio Head		No
			Audio /Control		Mono / Yes
			Erase(Full Track Erase)		Yes
		Tape Speed	Rec	PAL/SECAM	SP
				NTSC	-
			Play	PAL	SP
				NTSC	SP
		Fast Forward / Rewind Time (Approx.)			FF:1'48"/REW:1'48"
			Cassette		at E-180
		Forward/Reverse Picture Search	NTSC or PAL-M		SP=3x,5x
			PAL or SECAM		SP=5x,7x
		Frame Advance Slow Speed			1/10
					1/5~1/30
G-3	Tuning System	Broadcasting System			CCIR+Italy System B/G
		Tuner and Receive CH	System		1Tuner
			Destination		Oscar(W/HYPER)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 ohm
			CH Coverage		E2~E4, X~Z+2, S1~S10, E5~E12,S11~S41,E21~E69
		Intermediate Frequency			
			Picture(FP)		38.9MHz
			Sound(FS)		33.4MHz
			FP-FS		5.5MHz
		Preset CH			80CH
		Stereo/Dual TV Sound			No
G-4	Signal	Video Signal	Input Level		1 V p-p/75 ohm
			Output Level		1 V p-p/75 ohm
			S/N Ratio (Weighted)		53 dB
			Horizontal Resolution at SP Mode		240 Lines
		Audio Signal	Input Level		-3.8dB/50Kohm
			Output Level		-3.8dB/1Kohm
			S/N Ratio at SP		42 dB
			Harmonic Distortion (1KHz)		1.5 %
			Frequency Response	at SP	100Hz ~10kHz
				at LP	-
				at SLP	-
		Hi-Fi Audio Signal	Dynamic Range : More than		-
			Wow And Flutter : Less than		-
			Channel Separation : More than		-
			Harmonic Distortion : Less than		-
G-5	Power	Power Source	AC		230V 50Hz
			DC		-
		Power Consumption		at AC	65 W at 230 V 50 Hz

GENERAL SPECIFICATIONS

				at DC	-
			Stand by (at AC)		6 W at 230 V 50 Hz
			Per Year		-
		Protector	Power Fuse		Yes
			Dew Sensor		No
G-6	Regulation		Safety		CE
			Radiation		CE
			X-Radiation		-
G-7	Temperature		Operation		+5℃ ~ +40℃
			Storage		-20℃ ~ +60℃
G-8	Operating Humidity				Less then 80% RH
G-9	On Screen Display	Menu			Yes
			Menu	Type	Character
			ATS		No
			Timer Rec Set		Yes
			Channel Setup		Yes
				Auto Tuning	Yes
				Ch Mapping	No
				Ch Tuning	Yes
				Ch Allocation	Yes
			TV Setup		Yes
				On/Off Timer Set	Yes
				Picture	Yes
				Audio	No
			VCR Setup		No
				Auto Repeat On/Off	Yes
				System Select	No
				Scene Repeat	No
			System Setup		Yes
				Clock Set	Yes (Calendar 24h)
				Language	Yes
				System Select	No
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry			No
		Stereo/Audio Output			No
				Bilingal	No
				NICAM	No
		Clock/Date			Yes
		CH/AV			Yes
		Tape Counter(Linear Counter)			Yes
		Tape Speed			No
		Sleep Time			Yes
		Control Level	Volume		Yes
			Bright / Contrast / Sharpness/ Color		Yes
			Tint		No
			Bass/Treble/Balance		No
			Manual Tracking		Yes
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes
		Auto Tracking/Manual Tracking			Yes
		S-Repeat/SR-R/SR-PLAY			No
		Index			Yes
		Mute			Yes
		Hi-Fi			No
		Repeat			Yes
		Zero Return			No
		PAL/SECAM			No
		Dew			No
G-10	OSD Language				Eng Ger Fre Spa Ita
		OSD Language Setting			Ita
G-11	Clock,Timer and Timer Back-up	Calendar			1990/1/1 ~ 2081/12/31
		Timer Events			8 prog/ 1 month
		One Touch Recording Max Time			SP 5 Hours
		OTPB Valid Time			-
		Sleep Timer	Max Time		120 min.
			Step		10 min.
		On/Off Timer	Program(On Tim / Off Tim)		1 prog.
		Auto Shut Off	No Signal		15 min.

		No Operation	-	min.	
		Timer Back-up (at Power Off Mode)	30	min.	
G-12	Remote Control	Unit	RC-CH		
		Glow in Dark Remocon	No		
		Power Source	Voltage(D.C)	3V	
			UM size x pcs	UM-4 x 2 pcs	
		Total Keys	36	Keys	
		Keys	Power	Yes	
			1	Yes	
			2	Yes	
			3	Yes	
			4	Yes	
			5	Yes	
			6	Yes	
			7	Yes	
			8	Yes	
			9	Yes	
			0/AV	Yes	
			CH/Tr Up	No	
			CH/Tr Up/Page Up	Yes	
			CH/Tr Down	No	
			CH/Tr Down /Page Down	Yes	
			Volume Up	Yes	
			Volume Down	Yes	
			Play/Up	No	
			Play/Up/Slow	Yes	
			F.Fwd/Right	Yes	
			Rew/Left	Yes	
			Pause/Still	Yes	
			Pause	No	
			Stop/Down	Yes	
			Rec/OTR	Yes	
			Eject	Yes	
			Counter Reset	Yes	
			Speed	No	
			Timer Rec	Yes	
			TV Monitor	Yes	
			TV Monitor /Rec Monitor	No	
			Program	Yes	
			Program /V+(ShowView)	No	
			Auto Tracking	No	
			Auto Tracking /Reveal	Yes	
			Menu	Yes	
			Enter	No	
			Enter/Hold	Yes	
			Cancel/Ch Skip	No	
			Cancel/Ch Skip/F-T-B	Yes	
			Index	No	
			Index /Sub Page	Yes	
			Call	Yes	
			Text/Mix/TV	Yes	
			Sleep Timer	Yes	
			Mute	Yes	
			Zero Return	Yes	
			CM Skip	No	
			OTPB	No	
			END Call	No	
			Red	No	
			Cyan	No	
			Green	No	
			Yellow	No	
			Audio Select	No	
G-13	Features	Auto Head Cleaning		Yes	
		Auto Tracking		Yes	
		HQ (VHS Standard High Quality)		Yes	
		Auto Power On, Auto Play, Auto Rewind, Auto Eject		Yes	
		Auto Shut Off		Yes	

		Auto Repeat		Yes	
		VIDEO PLUS+(SHOWVIEW,G-CODE)			No
		CH Auto Set-Up/Auto Clock			No
		Forward / Reverse Picture Search		Yes	
		One Touch Playback			No
		Auto Tuning		Yes	
		Anti-Theft			No
		End Call			No
		Index Search		Yes	
		SQPB			No
		CATV			No
		CM Skip(30sec x 6 Times)			No
		Comb Filter			No
		TText		Yes	
			Text type	Unitext	
		Scene Repeat			No
		Hotel Lock			No
		TV Monitor		Yes	
		TV/Rec Monitor			No
		Zero Return		Yes	
		Choke Coil			No
G-14	Accessories	Owner's Manual	Language	Italian	
			w/Guarantee Card		No
		Remote Control Unit		Yes	
		Rod Antenna			No
			Poles	-	
			Terminal	-	
			w/300 ohm to 75 ohm Antenna Adapter	-	
		Loop Antenna			No
			Terminal	-	
		U/V Mixer			No
		DC Car Cord (Center+)			No
		Guarantee Card		Yes	
		Warning Sheet			No
		Circuit Diagram			No
		Antenna Change Plug			No
		Service Facility List			No
		Important Safeguard			No
		Dew/AHC Caution Sheet			No
		AC Plug Adapter			No
		Quick Set-up Sheet			No
		Battery		Yes	
			UM size x pcs	UM-4 x 2 pcs	
			OEM Brand		No
		AC Cord			No
		AV Cord (2Pin-1Pin)			No
		21pin-RCA Cable			No
		Registration Card			No
		PTB Sheet			No
		Anti-Theft Sheet			No
		Euro Warranty Information Sheet			No
G-15	Interface	Switch	Front	Power	Yes
				Play	Yes
				Pause/Still	No
				System Select	No
				One Touch Playback	No
				Channel Up	Yes
				Channel Down	Yes
				F.FWD/Cue	Yes
				Eject/Stop	Yes
				Main Power SW	Yes
				Volume Up	Yes
				Volume Down	Yes
				Rew/Rev	Yes
				Rec/OTR	Yes
			Rear	Main Power SW	No
		Indicator		Standby	Red

GENERAL SPECIFICATIONS

			Rec/OTR	Red	
			T-Rec	Red	
			On Timer		No
			CS		No
		Key Light up	Rec/OTR		No
			One Touch Playback		No
			Play		No
		Terminals	Front	Video Input	RCA x1
				Audio Input	RCA x1
				Other Terminal	Head Phone(Stereo & Mono, 3.5mm)
			Rear	Video Input	No
				Audio Input	No
				Video Output	No
				Audio Output	No
				Euro Scart	1-SCART
				Diversity	No
				Ext Speaker	No
				DC Jack 12V(Center +)	No
				VHF/UHF Antenna Input	DIN type
				AC Inlet	No
G-16	Set Size			Approx. W x D x H (mm)	502 x 486.5 x 513
G-17	Weight			Net (Approx.)	22.0kg (- lbs)
				Gross (Approx.)	24.0kg (- lbs)
G-18	Carton	Master Carton			No
				Content	-
				Material	-
				Dimensions W x D x H(mm)	-
				Description of Origin	-
		Gift Box			Yes
				Material	Double/Brown
				Dimensions W x D x H(mm)	569 x 562 x 590
				Design	As per Buyer's
				Description of Origin	No
		Drop Test		Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	46
		Container Stuffing(40' container)			332 Sets
G-19	Cabinet Material			Cabinet Front	PS 94HB
				Cabinet Rear	PS 94HB
				Jack Panel	PS 94HB

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 6 screws ①.
2. Remove the 2 screws ② which are used for holding the Back Cabinet.
3. Remove the AC cord from the AC cord hook ③.
4. Remove the Back Cabinet in the direction of arrow.

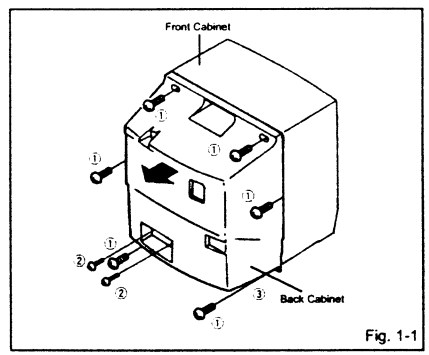


Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1. Remove the Anode Cap. (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors: (CP801 and CP850).
3. Remove the CRT PCB in the direction of arrow.

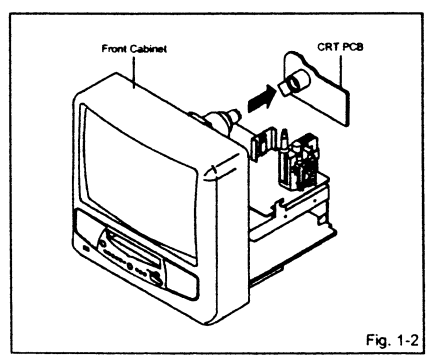


Fig. 1-2

1-3: TV/VCR BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws ①.
2. Disconnect the following connectors: (CP302, CP351, CP757, CP401, CP501 and CP502).
3. Unlock the support ②.
4. Remove the TV/VCR Block in the direction of arrow.

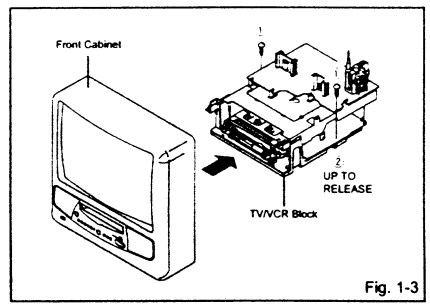


Fig. 1-3

1-4: MAIN PCB (Refer to Fig. 1-4)

1. Remove the screw ①.
2. Remove the Main PCB Holder.
3. Remove the 2 screws ②.
4. Remove the 3 screws ③.
5. Disconnect the following connectors: (CP810 and CP820).
6. Remove the Main PCB in the direction of arrow.

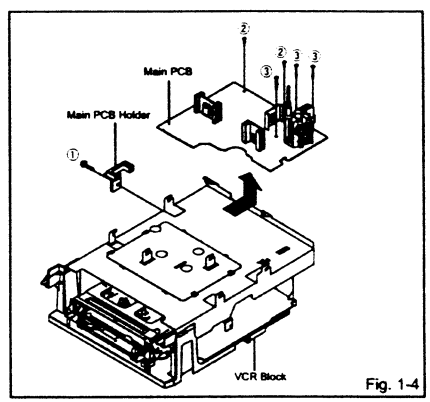


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: DECK SHIELD PLATE (Refer to Fig. 1-5)

1. Remove the 2 screws ①.
2. Remove the 4 screws ②.
3. Remove the screw ③.
4. Remove the Deck Shield Plate in the direction of arrow (A).
5. Remove the screw ④.
6. Remove the Shield Plate Bottom in the direction of arrow (B).

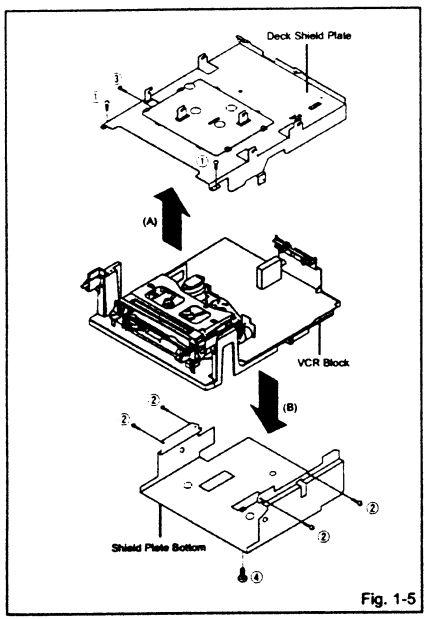


Fig. 1-5

1-6: DECK CHASSIS (Refer to Fig. 1-6)

1. Remove the 3 screws ①.
2. Disconnect the following connectors: (CP1004, CP1005, CP1006, CP4001, CP4004 and CP4005).
3. Remove the Deck Chassis in the direction of arrow.

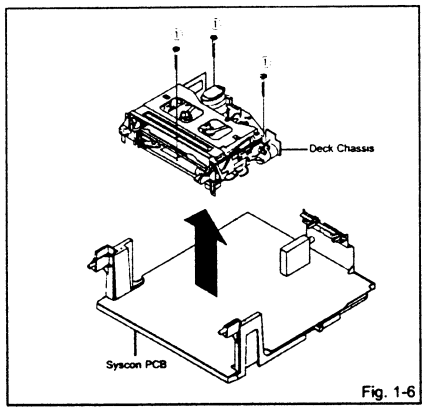


Fig. 1-6

1-7: JACK PLATE AND SYSCON PCB (Refer to Fig. 1-7)

1. Remove the screw ①.
2. Remove the Syscon PCB in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Unlock the 2 supports ③.
5. Remove the Jack Plate in the direction of arrow (B).

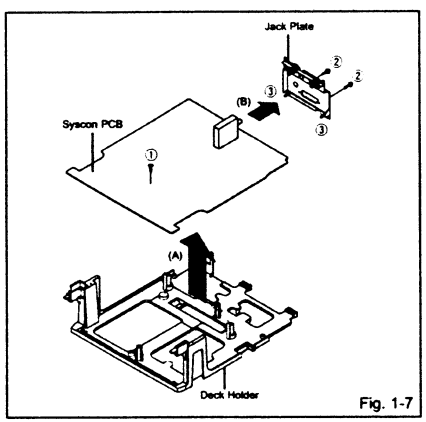


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DECK PARTS

2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Remove the 2 screws ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

When you install the Top Bracket, install the screw (1) first, then install the screw (2).

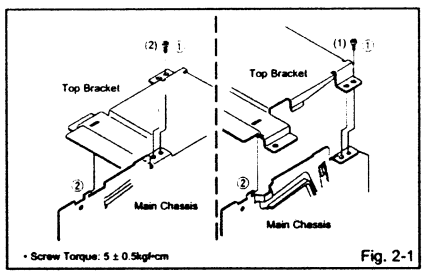


Fig. 2-1

2-2: FLAP LEVER/TAPE GUIDE R (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the back side.
2. Remove the Polyslider Washer ①.
3. Remove the Flap Lever.
4. Unlock the 3 supports ② and remove the Tape Guide R.

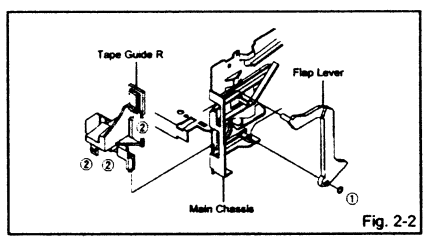


Fig. 2-2

2-3: TAPE GUIDE L (Refer to Fig. 2-3-A)

1. Move the Cassette Holder Ass'y to the back side.
2. Unlock the 2 supports ① and remove the Tape Guide L.
3. Remove the REC Lever. (Recorder only)

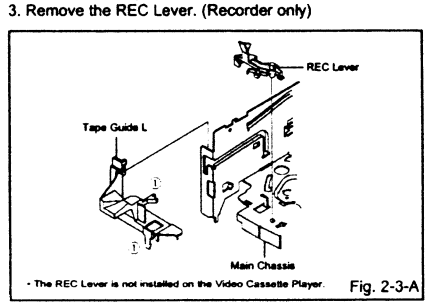


Fig. 2-3-A

NOTE

When you install the Tape Guide L, install as shown in the circle of Fig. 2-3-B. **(Refer to Fig. 2-3-B)**

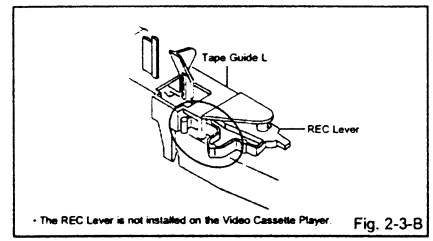


Fig. 2-3-B

2-4: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-4)

1. Move the Cassette Holder Ass'y to the front side so that the Link Ass'y doesn't slip out.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

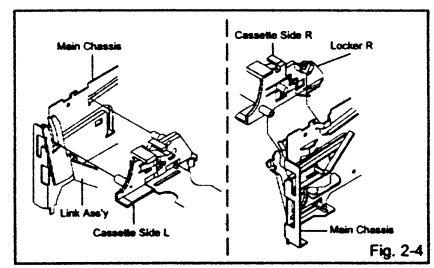


Fig. 2-4

2-5: CASSETTE SIDE L/R (Refer to Fig. 2-5)

1. Unlock the 4 supports ① and then remove the Cassette Side L/R.
2. Remove the Cassette Earth Spring.

NOTE

1. When you install the Cassette Side R, be sure to move the Locker R after installing.
2. After the installation of the Cassette Holder, then install the Cassette Earth Spring.

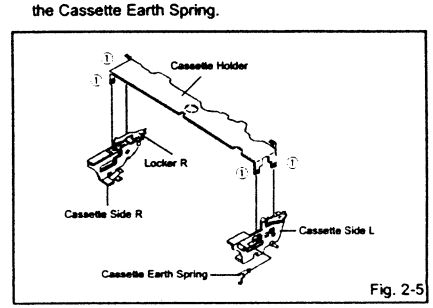


Fig. 2-5

2-6: LINK ASS'Y (Refer to Fig. 2-6)

1. Set the Link Ass'y to the Eject position.
2. Remove the (A) side of the Link Ass'y first, then remove the (B) side.

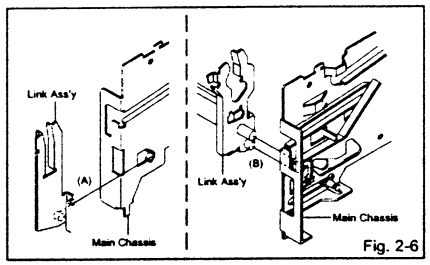


Fig. 2-6

2-7: LOADING MOTOR ASS'Y (Refer to Fig. 2-7)

1. Remove the Link Lever.
2. Remove the Dumper Spring.
3. Remove the 2 screws ①.
4. Unlock the support ② and remove the Loading Motor Ass'y.
5. Unlock the 2 supports ③ and remove the Deck PCB (BOT).

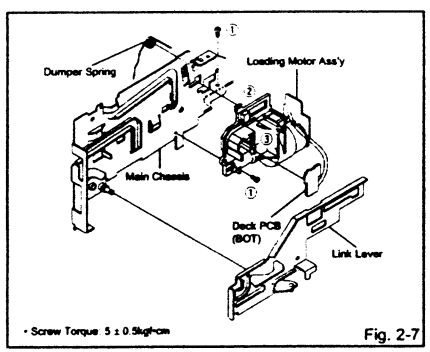


Fig. 2-7

2-8: SENSOR COVER L3 (Refer to Fig. 2-8)

1. Unlock the support ① and remove the Sensor Cover L3.

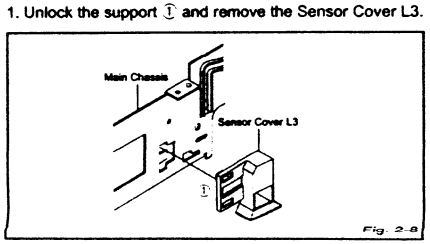


Fig. 2-8

2-9: TENSION ASS'Y (Refer to Fig. 2-9-B)

1. Turn the Middle Gear clockwise so that the Tension Holder hook, is set to the position of Fig. 2-9-A to more the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the support ① and remove the Tension Arm Ass'y.
4. Remove the Tension Adjust.
5. Unlock the 2 supports ② and remove the Tension Band Ass'y.
6. Float the hook ③ and turn it clockwise then remove the Tension Holder.
7. Remove the SS Brake Spring.
8. Remove the SS Arm Brake.

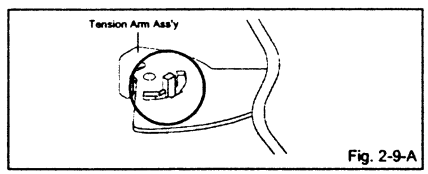


Fig. 2-9-A

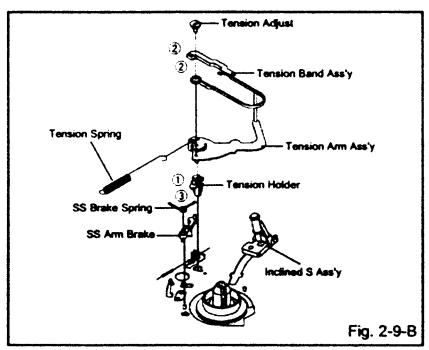


Fig. 2-9-B

NOTE

When you install the Tension Adjust, install as shown in Fig. 2-9-C. **(Refer to Fig. 2-9-C)**

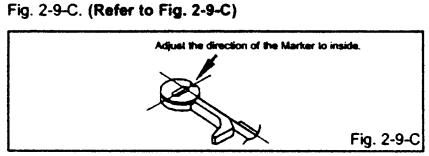


Fig. 2-9-C

2-10: T BRAKE ASS'Y (Refer to Fig. 2-10)

1. Remove the T Brake Spring.
2. Turn the T Brake Ass'y clockwise and bend the hook section to remove it.

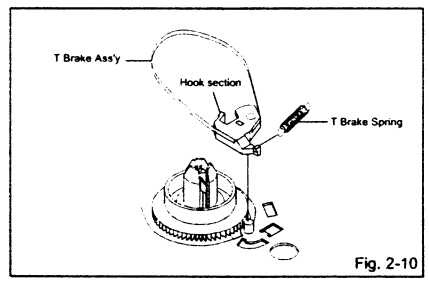


Fig. 2-10

2-11: S REEL/T REEL (Refer to Fig. 2-11)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-11)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and oil it (FL OIL #6115). (If you do not oil, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

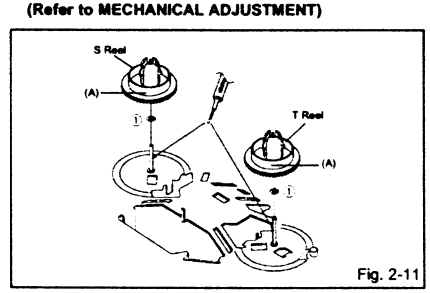


Fig. 2-11

2-12: PINCH ROLLER BLOCK/P5-3 ARM ASS'Y (Refer to Fig. 2-12-A)

1. Remove the P5 Spring.
2. Remove the screw ①.
3. Unlock the 2 supports ② and remove the Cassette Opener.
4. Remove the Pinch Roller Block, Pinch Roller Arm Spring, Pinch Roller Lever Ass'y and P5-3 Arm Ass'y.

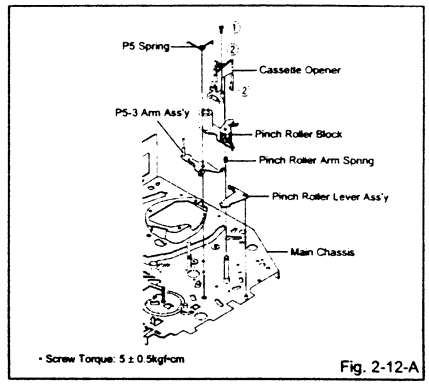


Fig. 2-12-A

NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. When you install the Pinch Roller Block, install as shown in the circle of Fig. 2-12-B. **(Refer to Fig. 2-12-B)**

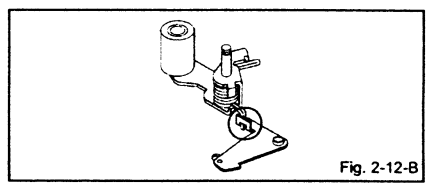


Fig. 2-12-B

2-13: A/C HEAD (Refer to Fig. 2-13-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-13-B. **(Refer to Fig. 2-13-B)**
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).

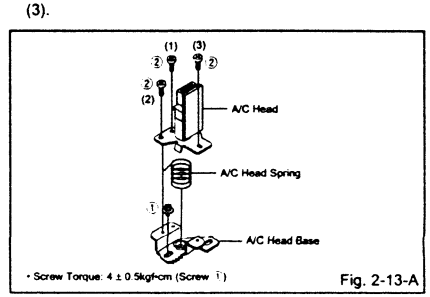


Fig. 2-13-A

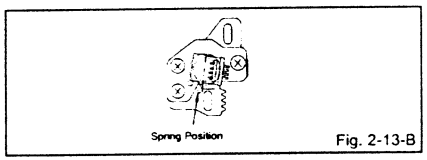


Fig. 2-13-B

2-14: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-14)

1. Remove the screw ①.
2. Remove the FE Head.

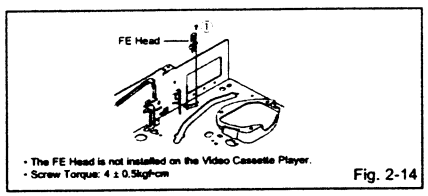


Fig. 2-14

2-15: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-15)

1. Unlock the support ① and remove the AHC Ass'y.
2. Remove the 3 screws ②.
3. Remove the Cylinder Unit Ass'y.

NOTE

When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.

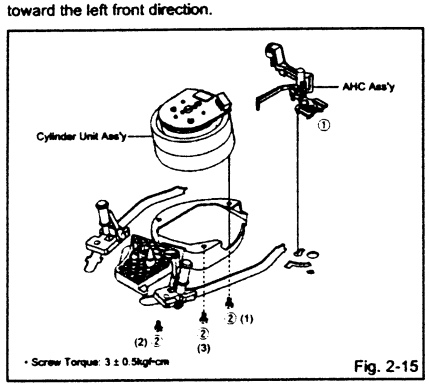


Fig. 2-15

2-16: CAPSTAN DD UNIT (Refer to Fig. 2-16)

1. Remove the Capstan Belt.
2. Remove the 3 screws ①.
3. Remove the Capstan DD Unit.

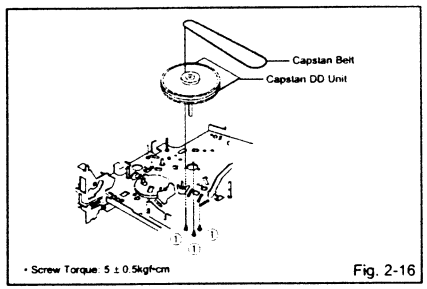


Fig. 2-16

2-17: MIDDLE GEAR/MAIN CAM (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①, then remove the Middle Gear.
2. Remove the E-Ring, then remove the Main Cam, P5 Cam and Pinch Roller Cam.
3. Remove the Polyslider Washer ②, then remove the Joint Gear.

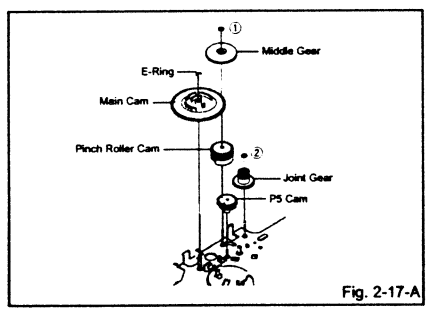


Fig. 2-17-A

NOTE

When you install the Pinch Roller Cam, P5 Cam and Main Cam, align each marker. **(Refer to Fig. 2-17-B)**

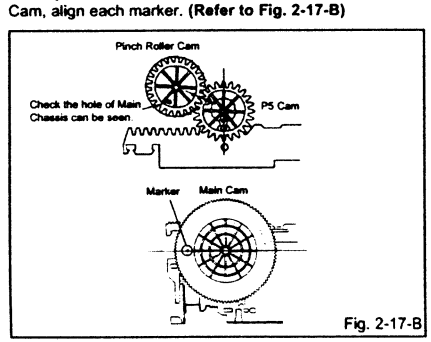


Fig. 2-17-B

2-18: CLUTCH ASS'Y (Refer to Fig. 2-18)

1. Remove the Capstan Brake Spring.
2. Remove the Polyslider Washer ①.
3. Remove the Clutch Ass'y, Ring Spring and Coupling Gear.
4. Unlock the 2 supports ② and remove the Clutch Lever.

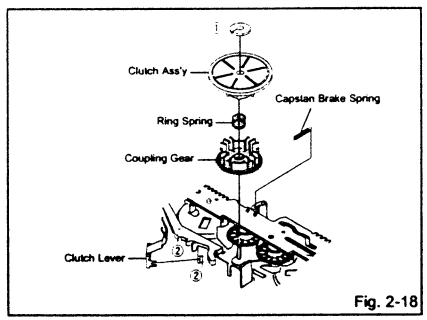


Fig. 2-18

2-19: LOADING GEAR S/T ASS'Y (Refer to Fig. 2-19-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Slide the Main Rod and remove the Capstan Brake Ass'y.
3. Remove the Main Rod, Tension Lever, Clutch Actuator, Idler Arm Ass'y.
4. Remove the screw ②.
5. Remove the LED Reflecter.
6. Remove the Loading Arm S Ass'y and Loading Arm T Ass'y.
7. Remove the Loading Gear S and Loading Gear T.
8. Remove the Loading Gear Spring.

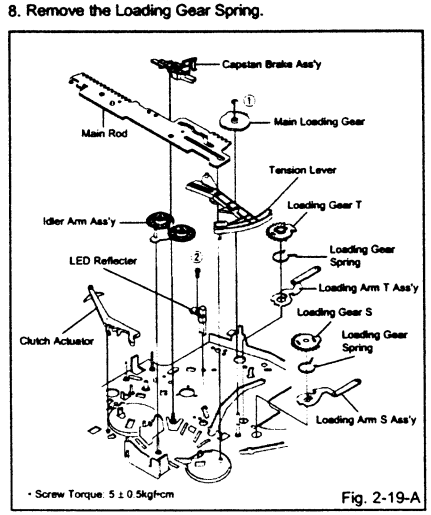


Fig. 2-19-A

NOTES

1. When you install the Loading Arm S Ass'y, Loading Arm T Ass'y and Main Loading Gear, align each marker. **(Refer to Fig. 2-19-B)**

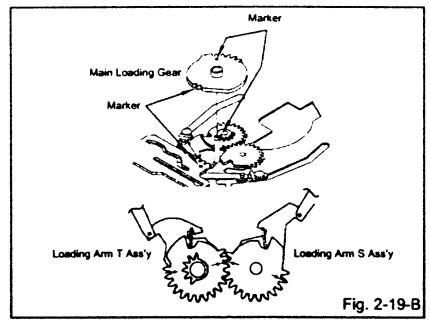


Fig. 2-19-B

2. When you install the Clutch Actuator, install as shown in the circle of Fig. 2-19-C. **(Refer to Fig. 2-19-C)**

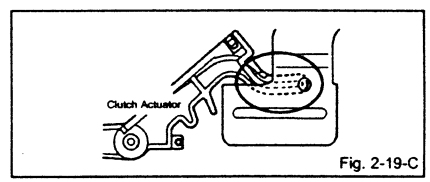


Fig. 2-19-C

2-20: INCLINED S/T ASS'Y (Refer to Fig. 2-20)

1. Unlock the support ① and remove the P4 Cover.
2. Remove the screw ②.
3. Unlock the support ③ and remove the Loading Gear Holder.
4. Remove the Inclined S.
5. Remove the Inclined T.
6. Remove the 2 screws ④, then remove the Guide Roller.

NOTE

Do not touch the roller of Guide Roller.

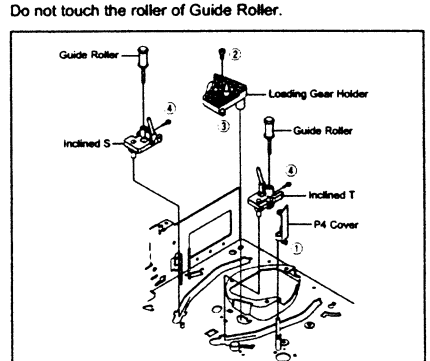


Fig. 2-20

3. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

- After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
- Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

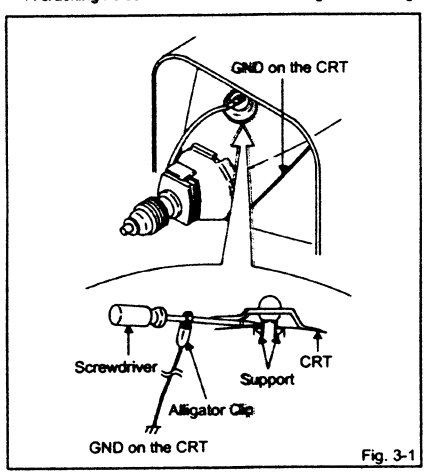


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

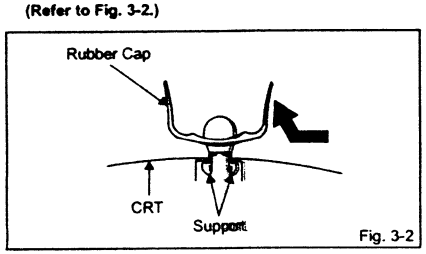


Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

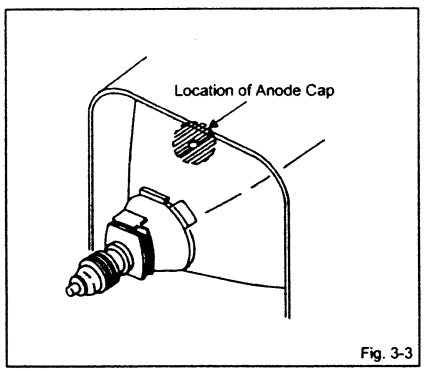


Fig. 3-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**

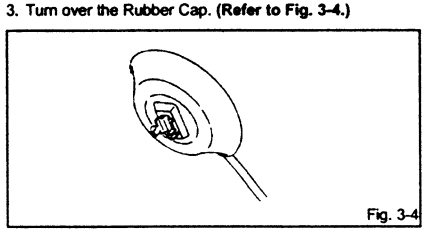


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5.**

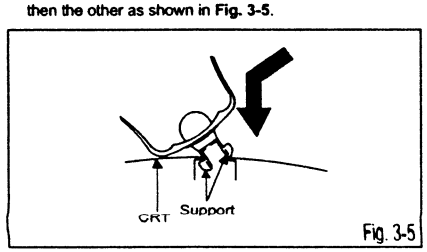


Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

4. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 4-1.)**

NOTE

Masking is carried out on all the parts located within 10 mm distance from IC leads.

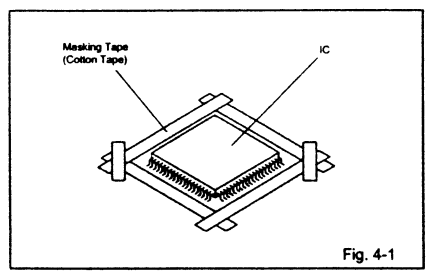


Fig. 4-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 4-2.)**

NOTE

Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

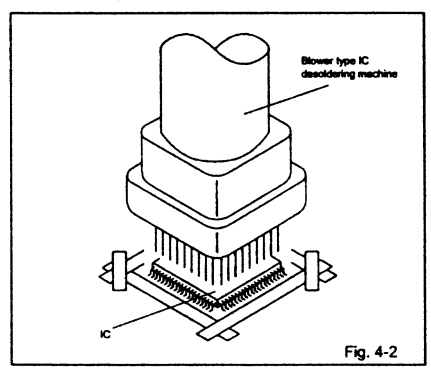


Fig. 4-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 4-3.)**

NOTE

Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

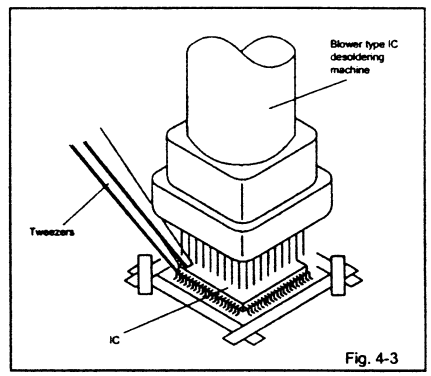


Fig. 4-3

4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 4-4.)**

NOTE

Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

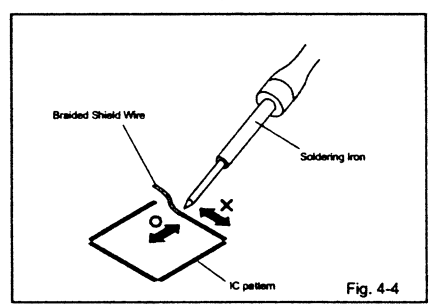


Fig. 4-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 4-5.)**

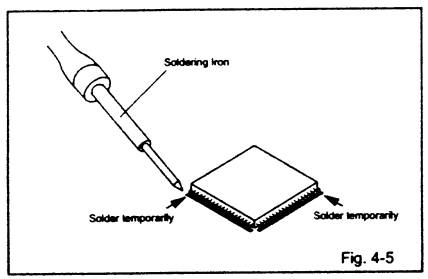


Fig. 4-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 4-6.)**

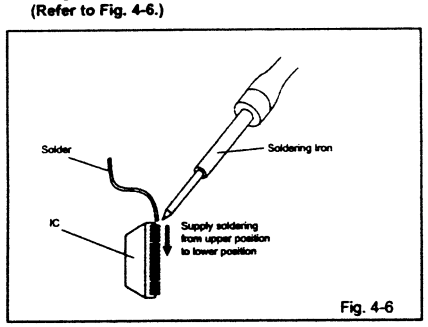


Fig. 4-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 4-7.)**

NOTE

Do not absorb the solder to excess.

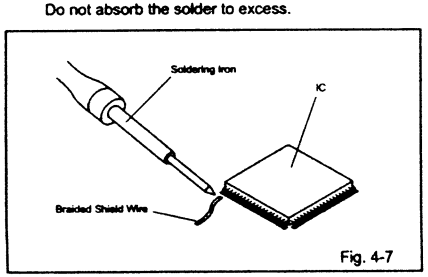


Fig. 4-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 4-8.)**

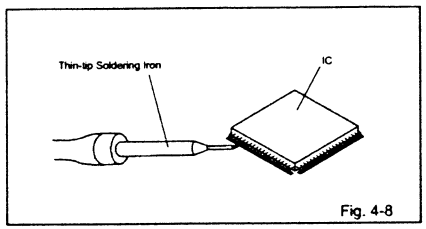


Fig. 4-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

KEY TO ABBREVIATIONS

A	A/C	Audio/Control		H.SW	Head Switch
	ACC	Automatic Color Control		Hz	Hertz
	AE	Audio Erase	I	IC	Integrated Circuit
	AFC	Automatic Frequency Control		IF	Intermediate Frequency
	AFT	Automatic Fine Tuning		IND	Indicator
	AFT DET	Automatic Fine Tuning Detect		INV	Inverter
	AGC	Automatic Gain Control	K	KIL	Killer
	AMP	Amplifier	L	L	Left
	ANT	Antenna		LED	Light Emitting Diode
	A.PB	Audio Playback		LIMIT AMP	Limiter Amplifier
	APC	Automatic Phase Control		LM, LDM	Loading Motor
	ASS'Y	Assembly		LP	Long Play
	AT	All Time		L.P.F	Low Pass Filter
	AUTO	Automatic		LUMI.	Luminance
	A/V	Audio/Video	M	M	Motor
B	BGP	Burst Gate Pulse		MAX	Maximum
	BOT	Beginning of Tape		MINI	Minimum
	BPF	Bandpass Filter		MIX	Mixer, mixing
	BRAKE SOL	Brake Solenoid		MM	Monostable Multivibrator
	BUFF	Buffer		MOD	Modulator, Modulation
	B/W	Black and White		MPX	Multiplexer, Multiplex
C	C	Capacitance, Collector		MS SW	Mecha State Switch
	CASE	Cassette	N	NC	Non Connection
	CAP	Capstan		NR	Noise Reduction
	CARR	Carrier	O	OSC	Oscillator
	CH	Channel		OPE	Operation
	CLK	Clock	P	PB	Playback
	CLOCK (SY-SE)	Clock (Syscon to Servo)		PB CTL	Playback Control
	COMB	Combination, Comb Filter		PB-C	Playback-Chrominance
	CONV	Converter		PB-Y	Playback-Luminance
	CPM	Capstan Motor		PCB	Printed Circuit Board
	CTL	Control		P. CON	Power Control
	CYL	Cylinder		PD	Phase Detector
	CYL-M	Cylinder-Motor		PG	Pulse Generator
	CYL SENS	Cylinder-Sensor		P-P	Peak-to Peak
D	DATA (SY-CE)	Data (Syscon to Servo)	R	R	Right
	dB	Decibel		REC	Recording
	DC	Direct Current		REC-C	Recording-Chrominance
	DD Unit	Direct Drive Motor Unit		REC-Y	Recording-Luminance
	DEMOD	Demodulator		REEL BRK	Reel Brake
	DET	Detector		REEL S	Reel Sensor
	DEV	Deviation		REF	Reference
E	E	Emitter		REG	Regulated, Regulator
	EF	Emitter Follower		REW	Rewind
	EMPH	Emphasis		REV, RVS	Reverse
	ENC	Encoder		RF	Radio Frequency
	ENV	Envelope		RMC	Remote Control
	EOT	End of Tape		RY	Relay
	EQ	Equalizer	S	S. CLK	Serial Clock
	EXT	External		S. COM	Sensor Common
F	F	Fuse		S. DATA	Serial Data
	FBC	Feed Back Clamp		SEG	Segment
	FE	Full Erase		SEL	Select, Selector
	FF	Fast Forward, Flipflop		SENS	Sensor
	FG	Frequency Generator		SER	Search Mode
	FL SW	Front Loading Switch		SI	Serial Input
	FM	Frequency Modulation		SIF	Sound Intermediate Frequency
	FSC	Frequency Sub Carrier		SO	Serial Output
	FWD	Forward		SOL	Solenoid
G	GEN	Generator		SP	Standard Play
	GND	Ground		STB	Serial Strobe
H	H.P.F	High Pass Filter		SW	Switch

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or misuse may cause transformation and aging of rubber parts.

Parts Name \ Time	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Audio Control Head	■	■	■	■	■	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	■	■	
Capstan Belt			■	■	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	■	■	■	■ ●	
Capstan DD Unit					●	
Loading Motor					●	
Tension Band					●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	■	■	■	●	Clean the Head

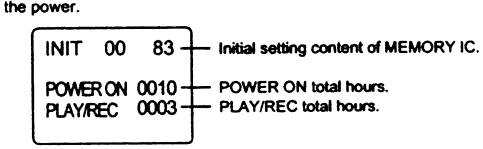
■ : Clean
● : Replace

CONFIRMATION OF HOURS USED

POWER ON total hours and PLAY/REC total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

NOTE: The confirmation of using hours will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and the Channel button (6) on the remote control for more than 2 seconds.
3. After the confirmation of using hours, turn off the power.



(16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)

PREVENTIVE CHECKS AND SERVICE INTERVALS

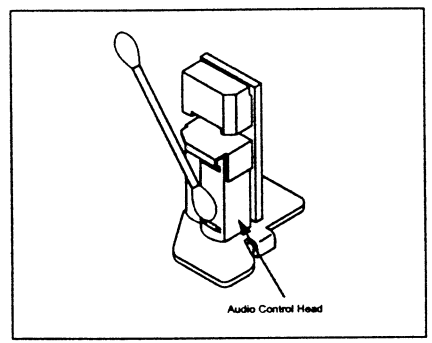
CLEANING

NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

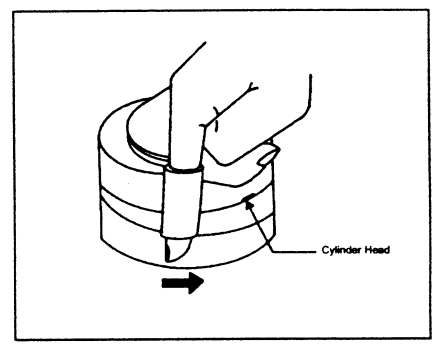
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.



KEY TO ABBREVIATIONS

S	SYNC	:	Synchronization
	SYNC SEP	:	Sync Separator, Separation
T	TR	:	Transistor
	TRAC	:	Tracking
	TRICK PB	:	Trick Playback
	TP	:	Test Point
U	UNREG	:	Unregulated
V	V	:	Volt
	VCO	:	Voltage Controlled Oscillator
	VIF	:	Video Intermediate Frequency
	VP	:	Vertical Pulse, Voltage Display
	V.PB	:	Video Playback
	VR	:	Variable Resistor
	V.REC	:	Video Recording
	VSF	:	Visual Search Fast Forward
	VSR	:	Visual Search Rewind
	VSS	:	Voltage Super Source
	V-SYNC	:	Vertical-Synchronization
	VT	:	Voltage Tuning
X	X'TAL	:	Crystal
Y	Y/C	:	Luminance/Chrominance

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter SERVICE MODE, unplug AC cord till lost actual clock time. Then press and hold Vol (-) button of main unit and remocon key for more than 2 seconds.

The both pressing of set key and remote control key will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On or alternatively, discharge backup capacitor.

Set Key	Remocon Key	Operations
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	2	Horizontal position adjustment of OSD. NOTE: Also can be adjusted by using the Adjustment MENU. Refer to the "ELECTRICAL ADJUSTMENT" (OSD HORIZONTAL).
VOL. (-) MIN	3	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	4	Adjust the PG SHIFTER manually. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
VOL. (-) MIN	5	Adjusting of the Tracking to the center position. NOTE: Also can be adjusted by pressing the ATR button for more tan 2 seconds during PLAY.
VOL. (-) MIN	6	POWER ON total hours and PLAY/REC total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	7	Releasing of PROTECTION PASSWORD.
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the "MECHANICAL ADJUSTMENT" (GUIDE ROLLER) and "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The EOT/BOT/Reel sensor do not work at this moment. Refer to the "PREPARATION FOR SERVICING"

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: **Initial Data setting will not be possible if clock has been set. To reset clock, either unplug AC cord and allow at least 30 minutes before Power On.**

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	40	16	07	81	6A	02	00	2D	C0	A1	81	12	04	07	40	00
10	00	05	63	65	66	09	27	00	05	00	18	00	00	00	00	00
20	01	0B	01	00	04	6A	42	F5	09	A0	87	00	00	5F	08	F0
30	25	F0	00	00	00	00	00	5F	01	F0	01	F0	0E	00	01	6C
40	38	21	15	28	A0	C4	20	08	BF	10	FF	FF	FF	FF	FF	FF

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. While holding down VOLUME button on front cabinet, press key 6 on remote control simultaneously. ADDRESS and DATA should appear as FIG 1.

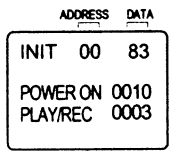
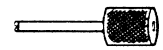
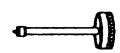
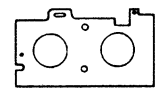
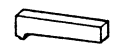
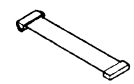


Fig. 1

3. ADDRESS is now selected and should "blink". Using the PLAY or STOP button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using PLAY or STOP button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

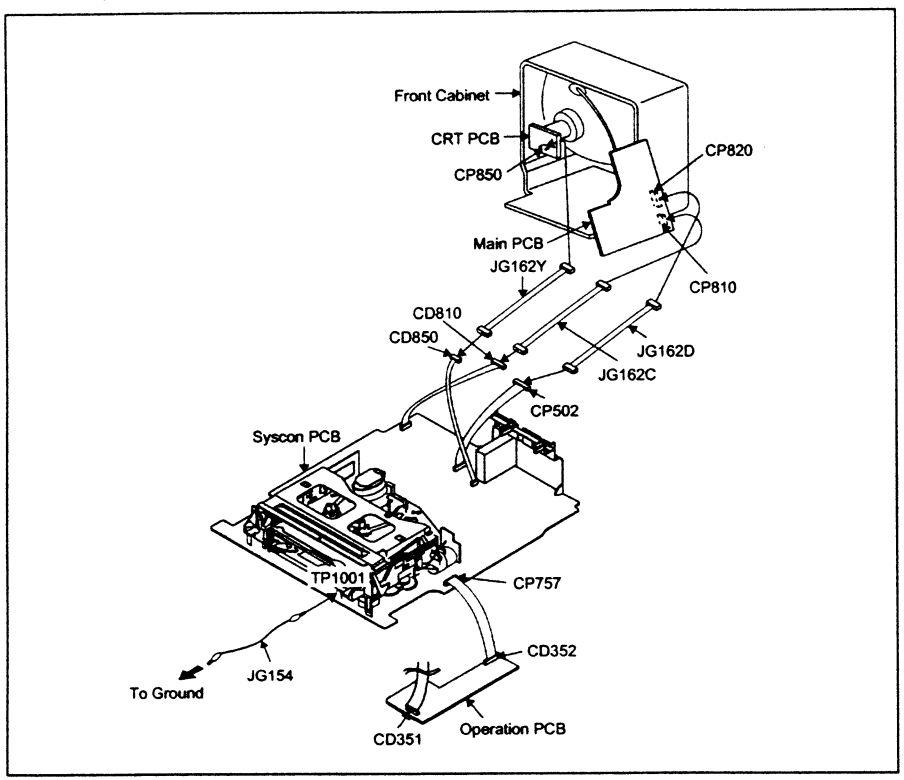
(For 2 head 1 speed model, 4 head model) VHS Alignment Tape JG001E (VP$_1$S-LI6^3) JG001F (VP$_1$S-CO1^3) JG001R (VP$_1$S-LI6^{3}H) JG001U (VP$_1$S-X6^3) 	**(For 2 head 2 speed model)** VHS Alignment Tape JG001C (VP$_2$S-LI6^3) JG001D (VP$_2$S-CO1^3) JG001V (VP$_2$S-X6^3) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 
JG153 X Value Adjustment Screwdriver 	JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063)
JG154 Cable 	JG162C Cable (8 Pins) JG162D Cable (13 Pins) JG162Y Cable (5 Pins) 	Tentelometer 	

Ref. No.	Part No.	Parts Name	Remarks
JG001E	APJG001E00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 1 speed model, 4 head model)**
JG001F	APJG001F00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 1 speed model, 4 head model)**
JG001R	APJG001R00	VHS Alignment Tape	Hi-Fi Audio **(For HI-FI model)**
JG001U	APJG001U00	VHS Alignment Tape	X Value Adjustment **(For 2 head 1 speed model, 4 head model)**
JG001C	APJG001C00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 2 speed model)**
JG001D	APJG001D00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 2 speed model)**
JG001V	APJG001V00	VHS Alignment Tape	X Value Adjustment **(For 2 head 2 speed model)**
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG162C	APJG162C00	Cable (8 Pins)	Used to connect the Syscon PCB and Main PCB
JG162D	APJG162D00	Cable (13 Pins)	Used to connect the Syscon PCB and Main PCB
JG162Y	APJG162Y00	Cable (5 Pins)	Used to connect the Syscon PCB and CRT PCB
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Unplug the connector CP351, CP757 and CP302 then remove the TV/VCR Block from the set.
2. Unplug the connector CP810, CP820 and CP850, then remove the Main PCB from the VCR Block.
3. Connect as shown in the below figure using the Service Fixture.
   - Connect the Syscon PCB to the Main PCB with the cable JG162C and JG162D.
   - Connect the Syscon PCB to the CRT PCB with the cable JG162Y.
4. Remove the Operation PCB from the set, then connect it with the Syscon PCB.
   If necessary, connect CP351.
5. Short circuit between **TP1001** and **Ground** with the cable JG154.
   (Refer to MAJOR COMPONENTS LOCATION GUIDE)
   The EOT, BOT and Reel Sensor do not work at this moment.
6. At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.



MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)
- When you activate the deck without the Cassette Holder, short circuit between **TP1001** and **GND. (Refer to ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE)** In this condition the BOT/EOT/Reel Sensor will not function.

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024A)** on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A.**
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig **(JG024A)** and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.

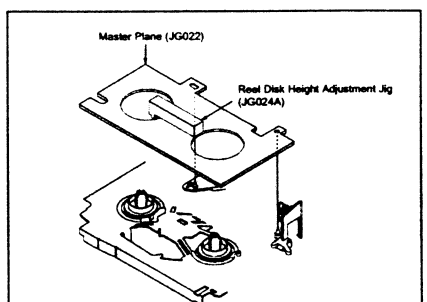


Fig. 1-1-A

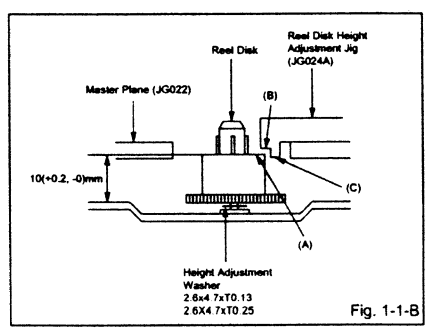


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the Tension Adjust until the edge of the Tension Arm is positioning within 0.5mm range from the standard line center of Main Chassis.
   After this adjustment, confirm that the cut position is located in "A" area as shown in **Fig. 1-2-B.** If it is located in "B" area, adjust again.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

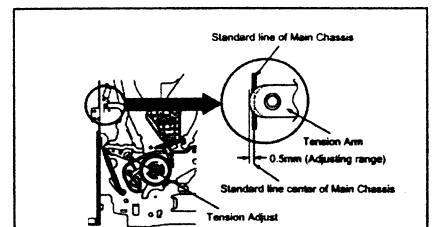


Fig. 1-2-A

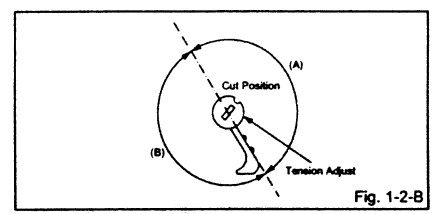


Fig. 1-2-B

1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (E-180) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3.** Confirm that the meter indicates 20 ± 2gf in the beginning of playback.

• USING A CASSETTE TYPE TORQUE TAPE **(JG100A)**

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 60~110gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

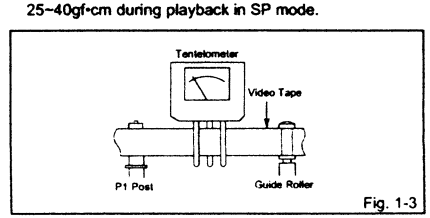


Fig. 1-3

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Picture Search (Rewind) mode. **(Refer to Fig.1-4)**
2. Then, confirm that it indicates 120~180gf•cm.

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A.**
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Turn the Torque Gauge **(JG002F)** clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

(T Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A.**
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge **(JG002E)** and Adapter **(JG002B)** on the T reel. Turn the Torque Gauge **(JG002E)** counterclockwise.
4. Then, confirm that it indicates 45~70gf•cm.

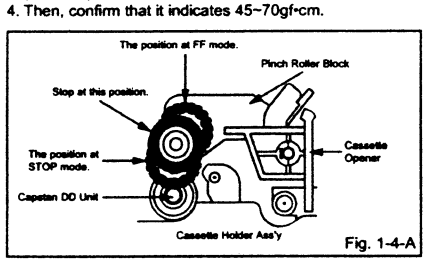


Fig. 1-4-A

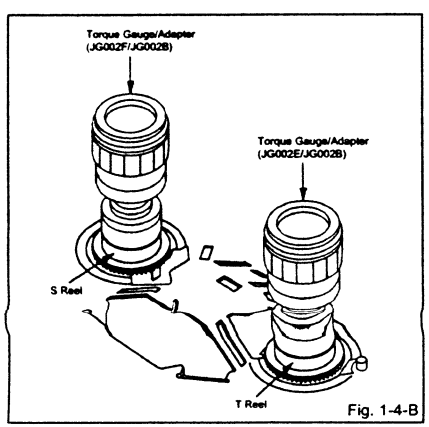


Fig. 1-4-B

NOTE

If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band Ass'y/ Tension Arm Ass'y T Reel side: T Reel/T Brake Spring/T Brake Ass'y

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape **(JG001C or JG001E). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP4002 (Envelope)** and CH-2 to **TP4001 (SW Pulse).**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Adjusting Driver **(JG005)** slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown **in Fig. 2-1-B,** even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

After adjustment, confirm and adjust A/C head. **(Refer to item 2-2)**

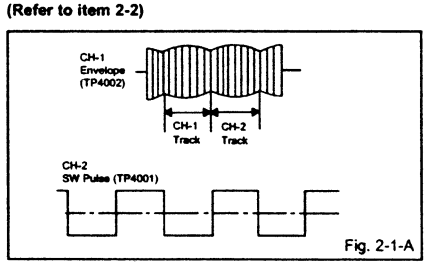


Fig. 2-1-A

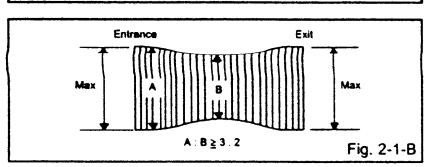


Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/ CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape **(JG001C or JG001E). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A.**
   a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C.**
   c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

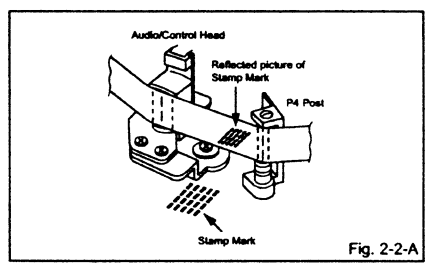


Fig. 2-2-A

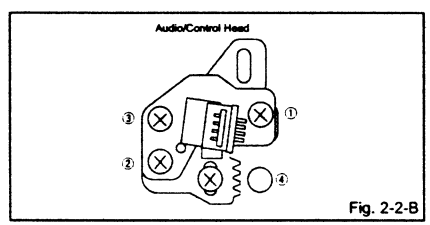


Fig. 2-2-B

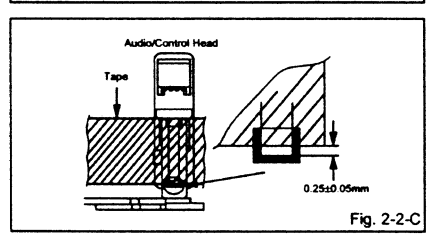


Fig. 2-2-C

2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP4002,** CH-2 to **TP4001** and CH-3 to **HOT side of Audio Out Jack.**
6. Playback the VHS Alignment Tape **(JG001U or JG001V). (Refer to SERVICING FIXTURE AND TOOLS)**
7. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the ④ **of Fig. 2-2-B.** Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3.**

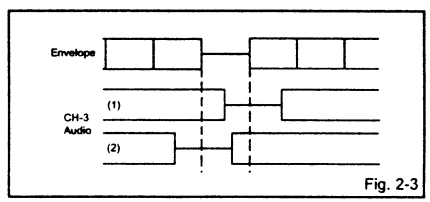


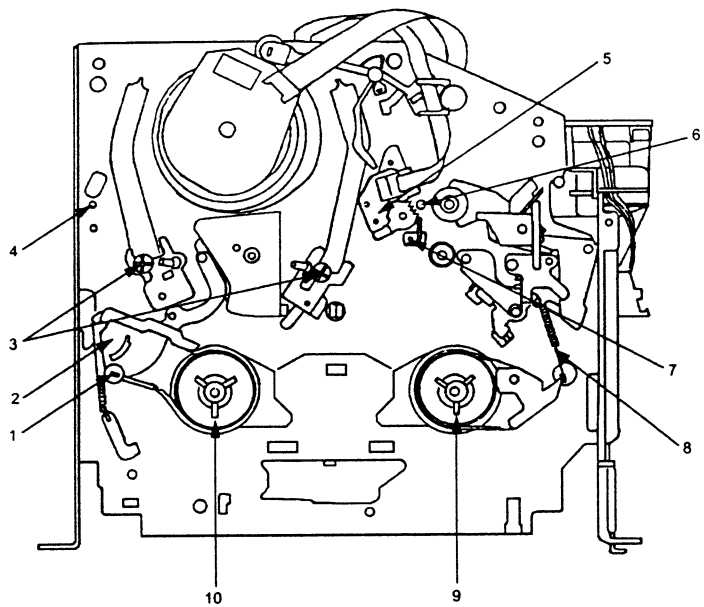
Fig. 2-3

2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP4002** and CH-2 to the **Hi-Fi Audio Out Jack.**
2. Playback the VHS Alignment Tape **(JG001R). (Refer to SERVICING FIXTURE AND TOOLS)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver **(JG153)** to ④ of **Fig. 2-2-B.** Change the X Value and adjust it so that the value becomes within 2 steps.

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Adjust
2. Tension Arm
3. Guide Roller
4. P1 Post
5. Audio/Control Head
6. X value adjustment driver hole
7. P4 Post
8. T Brake Spring
9. T Reel
10. S Reel

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

When replacing IC's or transistors, use only specified silicon grease. **(YG6260M)**
(To prevent the damage to IC's and transistors.)

On-Screen Display Adjustment

1. Unplug the AC plug for more than 30 minutes to set the clock to the non-setting state. Then, set the volume level to minimum.
   Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control for more than
2. 2 seconds to display adjustment mode on the screen as shown in **Fig. 1-1**.

NOTE

Use the channel buttons **(1-8)** on the remote control to select the options shown in **Fig. 1-1.**
Press the channel button **(0)** or MENU button on the remote control to end the adjustments.

1. H/V
2. AKB
3. COLOR TEMP
4. PICTURE
5. OTHERS
6. TEST PATTERN
7.
8. 0. END

Fig. 1-1

2. BASIC ADJUSTMENTS (VCR SECTION)

2-1: PG SHIFTER

1. Connect CH-1 on the oscilloscope to **TP4001** and CH-2 to **TP4501**.
2. Playback the alignment tape. **(JG001E)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control simultaneously until the indicator REC disappears. If the indicator REC disappears, adjustment is completed.

(If the above adjustments doesn't work well:)

5. Press the VOL. DOWN button on the set and the channel button **(3)** on the remote control simultaneously until the indicator REC disappears.
6. When the REC indicator is blinking, press both VOL. DOWN button on the set and the channel button **(4)** on the remote control simultaneously and adjust the Tracking +/- button until the arising to the down of Head Switching Pulse becomes 6.5 ± 0.5H.
   (Refer to Fig. 2-1-A, B)
7. Press the Tracking Auto button.

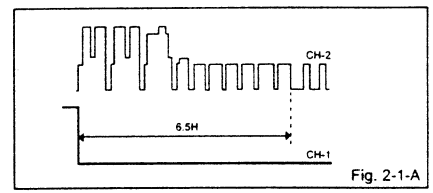


Fig. 2-1-A

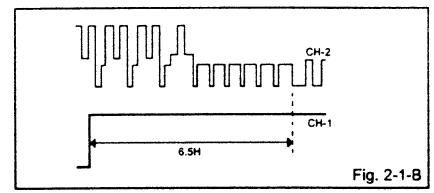


Fig. 2-1-B

2-2: VCO (AFT)

1. Connect the oscillator (38.9MHz) to **pin 11 of TU601** through 100 ohm resistor.
2. Connect the digital voltmeter to **pin 47 of IC601**.
3. Adjust the **L608** until the digital voltmeter is 3.8 ± 0.05V.

2-3: RF AGC

1. Receive the UHF (63dB).
2. Connect the digital voltmeter between the **pin 5** and the **pin 1 (GND) of CP603.**
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(05)** on the remote control to select "OTHERS". The **Fig. 2-2** appears on the display.
4. Press the channel button **(01)** on the remote control to select "RF AGC DELAY".
5. Press the PLAY or STOP button on the remote control until the digital voltmeter is 1.95 ± 0.05V.

1. RF AGC DELAY
2. VIDEO LEVEL
3. FM LEVEL
4. OSD H
5. CUT OFF
6. (CHROMA VOL)
7.
8. 0. RETURN

Fig. 2-2

ELECTRICAL ADJUSTMENTS

(TV SECTION)

2-4: CONSTANT VOLTAGE

1. Connect the digital voltmeter to **TP401**.
2. Set condition is AV MODE without signal.
3. Adjust the **VR502** until the DC voltage is 117 ± 0.5V.

2-5: CUT OFF

1. Place the set with Aging Test for more than 15 minutes.
2. Set condition is AV MODE without signal.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(05)** on the remote control to select "OTHERS". The **Fig. 2-2** appears on the display.
5. Press the channel button **(05)** on the remote control to select "CUT OFF".
6. Adjust the **Screen Volume** until a dim raster is obtained.

2-6: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-7: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the white 100% signal from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(02)** on the remote control to select "AKB". The **Fig. 2-3** appears on the display.
5. Press the channel button **(02)** on the remote control to select the "R. BIAS".
6. Using the PLAY or STOP button on the remote control, adjust the R. BIAS.
7. Press the CH. UP/DOWN button on the remote control to select the "G. BIAS", "B. BIAS", "R. DRIVE", "G. DRIVE" or "B. DRIVE".
8. Using the PLAY or STOP button on the remote control, adjust the G. BIAS, B. BIAS, R. DRIVE, G. DRIVE or B. DRIVE.
9. Perform the above adjustments 7 and 8 until the white color is looked like a white.

1. AKB AUTO
2. R. BIAS
3. G. BIAS
4. B. BIAS
5. R. DRIVE
6. G. DRIVE
7. B. DRIVE
8. AGC AUTO 0. RETURN

Fig. 2-3

2-8: HORIZONTAL PHASE

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
4. Press the channel button **(01)** on the remote control to select "H. PHASE".
5. Press the PLAY or STOP button on the remote control until the vertical line becomes fit to the notch of the shadow mask.

1. H. PHASE
2. H. BLK
3. V. SIZE 50/60
4. V. POSI 50/60
5. V. LIN 50/60
6. V. SC 50/60
7. V. COMP
8. (H FREQ) 0. RETURN

Fig. 2-4

2-9: VERTICAL SIZE

NOTE: Adjust after performing adjustments in section 2-8.

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
4. Press the channel button **(03)** on the remote control to select "V. SIZE 50/60".
5. Press the PLAY or STOP button on the remote control until the rectangle on the center of the screen becomes square.
6. Receive a broadcast and check if the picture is normal.
7. Receive the cross hatch signal of NTSC. (Audio Video Input)
8. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.

2-10: H. BLK

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
2. Press the channel button **(02)** on the remote control to select "H. BLK".
3. Switch the R/L by using the ENTER button on the remote control and check if the H. BLK step No. becomes "R2, L4".

2-11: VERTICAL LINEALITY

NOTE: Adjust after performing adjustments in section 2-10.

1. Receive the cross hatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
4. Press the channel button **(05)** on the remote control to select "V. LIN 50/60".
5. Press the PLAY or STOP button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.
6. Receive the cross hatch signal of NTSC. (Audio Video Input)
7. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.

2-12: VERTICAL POSITION

NOTE: Adjust after performing adjustments in section 2-11.

1. Receive the center cross signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
4. Press the channel button **(04)** on the remote control to select "V. POSI 50/60".
5. Press the PLAY or STOP button on the remote control until the horizontal line becomes fit to the notch of the shadow mask.
6. Receive the center cross signal of NTSC. Audio Video Input)
7. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~5.

2-13: OSD HORIZONTAL

1. Using the remote control, set the brightness and contrast to normal position.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(05)** on the remote control to select "OTHERS". The **Fig. 2-2** appears on the display.
3. Press the channel button **(04)** on the remote control to select "OSD H".
4. Press the PLAY or STOP button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-5)**

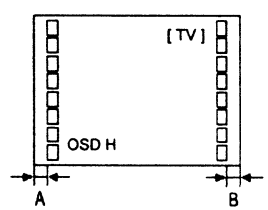


Fig. 2-5

1. BRIGHT
2. CONTRAST
3. COLOR
4. TINT
5. SHARPNESS
6. TEXT CONT
7.
8. 0. RETURN

Fig. 2-6

2-14: SUB COLOR

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast and color to normal position.
3. Connect the oscillscope to **TP801**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "PICTURE". The **Fig. 2-6** appears on the display.
5. Press the channel button **(03)** on the remote control to select "COLOR".
6. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
7. Press the PLAY or STOP button on the remote control until the red color level is adjusted to 95 ± 5% of the white level. **(Refer to Fig. 2-7)**
8. Receive the color bar pattern. (Audio Video Input)
9. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 2~7.

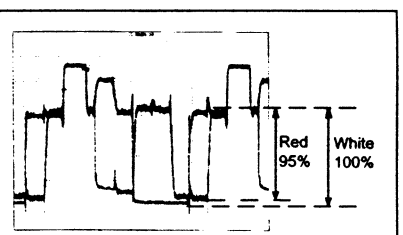


Fig. 2-7

2-15: V. S-CORRECTION (V. SC)

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
2. Press the channel button **(06)** on the remote control to select "V. SC 50/60".
3. Check if the step No. of V. SC is "0".
4. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.

2-16: V. COMP

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "H/V". The **Fig. 2-4** appears on the display.
2. Press the channel button **(07)** on the remote control to select "V. COMP".
3. Check if the step No. of V. COMP is "7".

2-17: SUB SHARPNESS

1. Activate the adjustment mode display of Fig. 1-1 and press the channel button **(04)** on the remote control to select "PICTURE". The **Fig. 2-6** appears on the display.
2. Press the channel button **(05)** on the remote control to select "SHARPNESS".
3. Check if the step No. of SHARPNESS is "35".
4. Press the AV button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.

2-18: TEXT CONTRAST

1. Using the remote control, set the brightness and contrast to normal position.
2. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "PICTURE". The **Fig. 2-6** appears on the display.
3. Press the channel button **(06)** on the remote control to select "TEXT CONT".
4. Check if the step No. of TEXT CONT is "15".

2-19: E-E LEVEL

1. Receive the color bar pattern. (Audio Video Input)
2. Connect the oscilloscope to **TP4501**.
3. Check if the VIDEO OUTPUT LEVEL is 1 ± 0.2Vp-p. **(Refer to Fig. 2-8)**

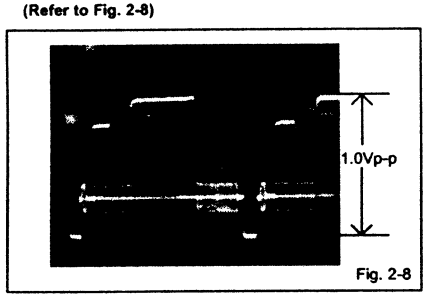


Fig. 2-8

2-20: COLOR LEVEL

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **TP4501**.
3. When setting to the Y-LEVEL 100%, check if the MAGENTA is 45 ± 10%. **(Refer to Fig. 2-9)**

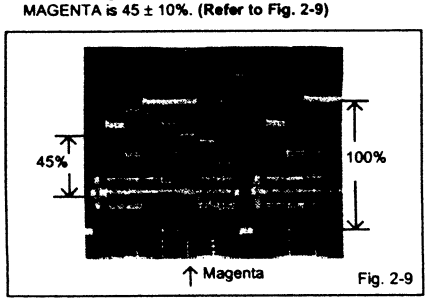
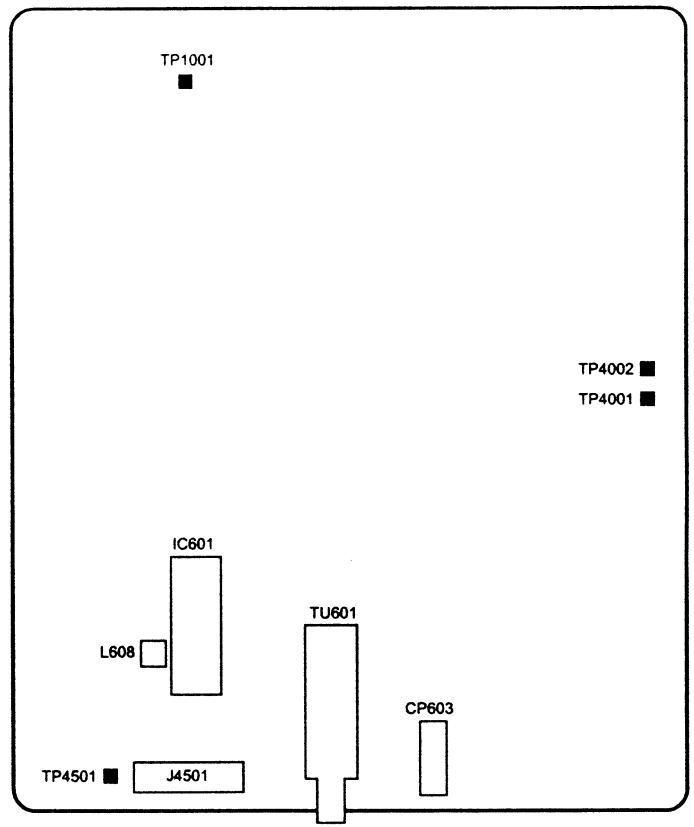


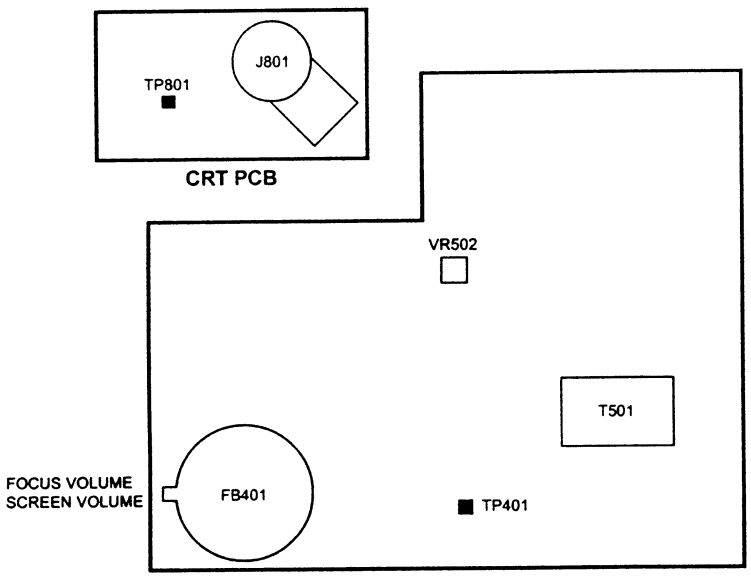
Fig. 2-9

3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (VCR SECTION)



SYSCON PCB

(TV SECTION)



4. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

4-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 4-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

4-2: PURITY

NOTE

Adjust after performing adjustments in section 4-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

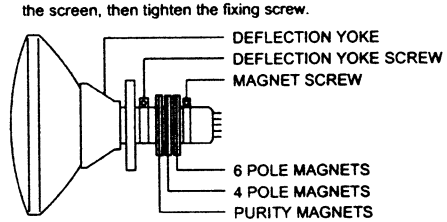


Fig. 4-1

4-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 4-2.

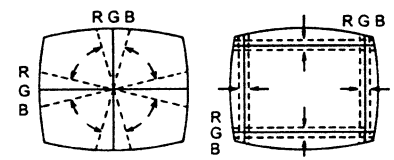
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

4-4: DYNAMIC CONVERGENCE

NOTE

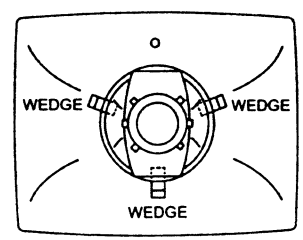
Adjust after performing adjustments in section 4-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 4-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 4-2-b)**



UPWARD/DOWNWARD SLANT RIGHT/LEFT SLANT

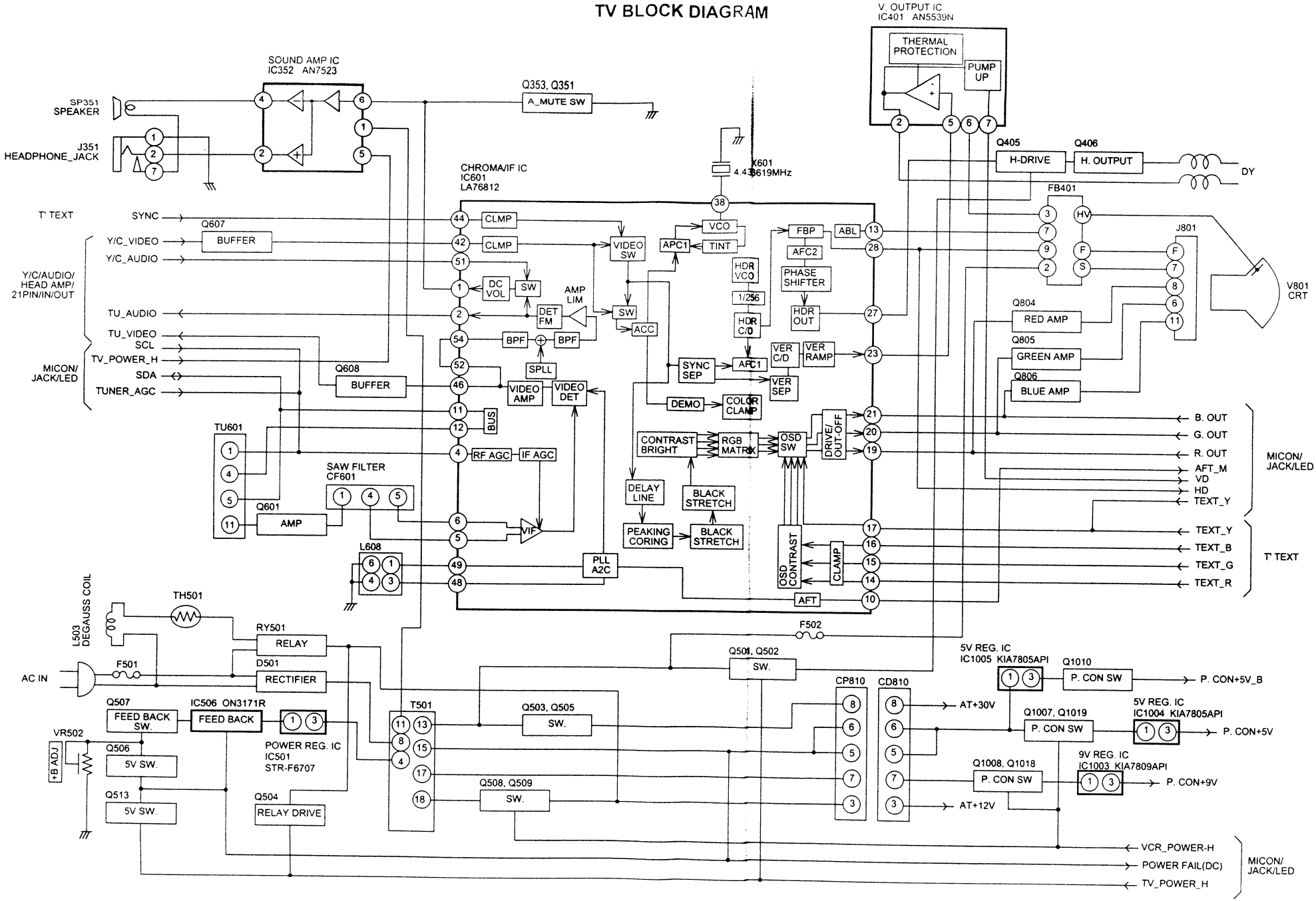
Fig. 4-2-a



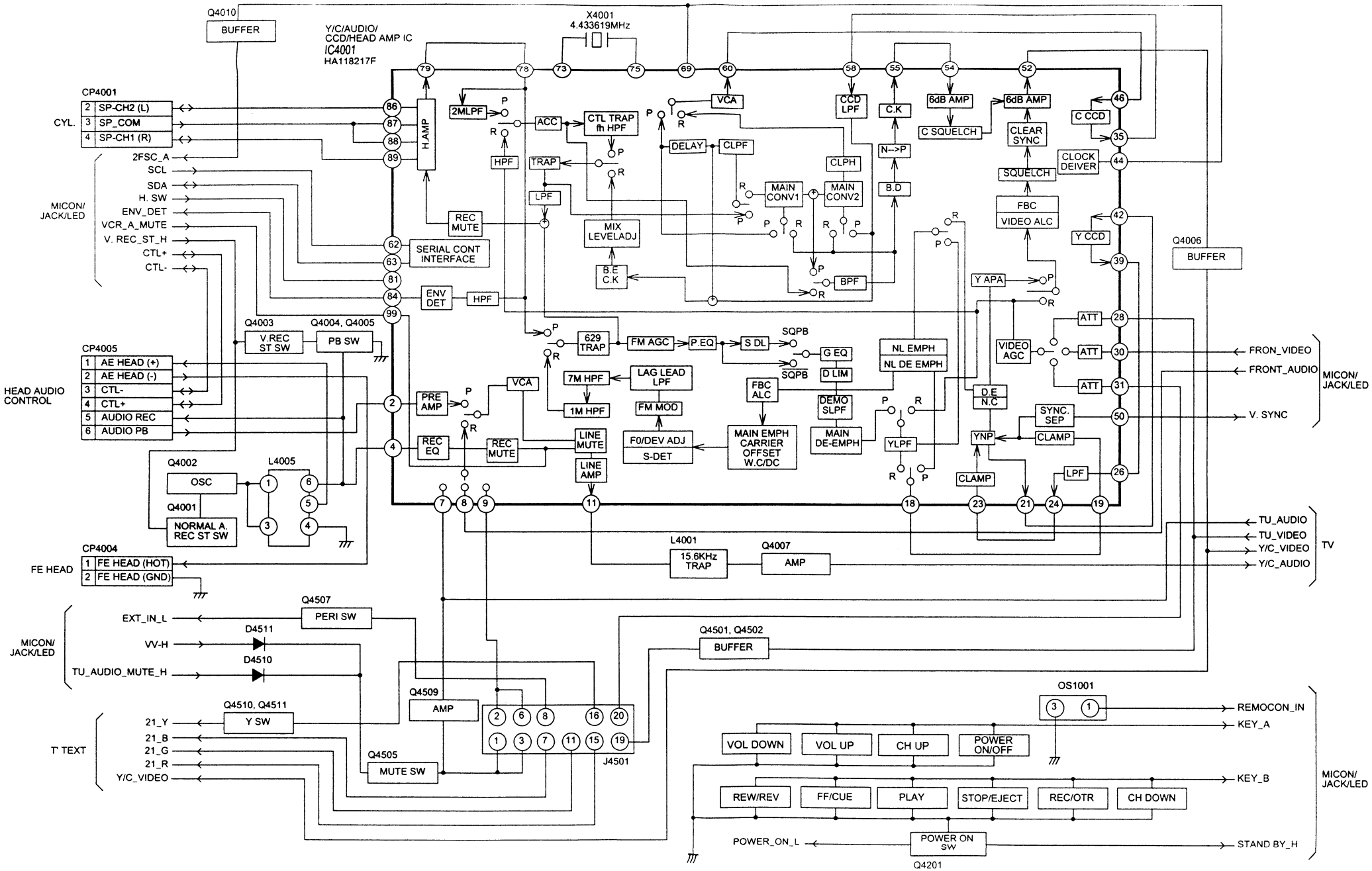
WEDGE POSITION

Fig. 4-2-b

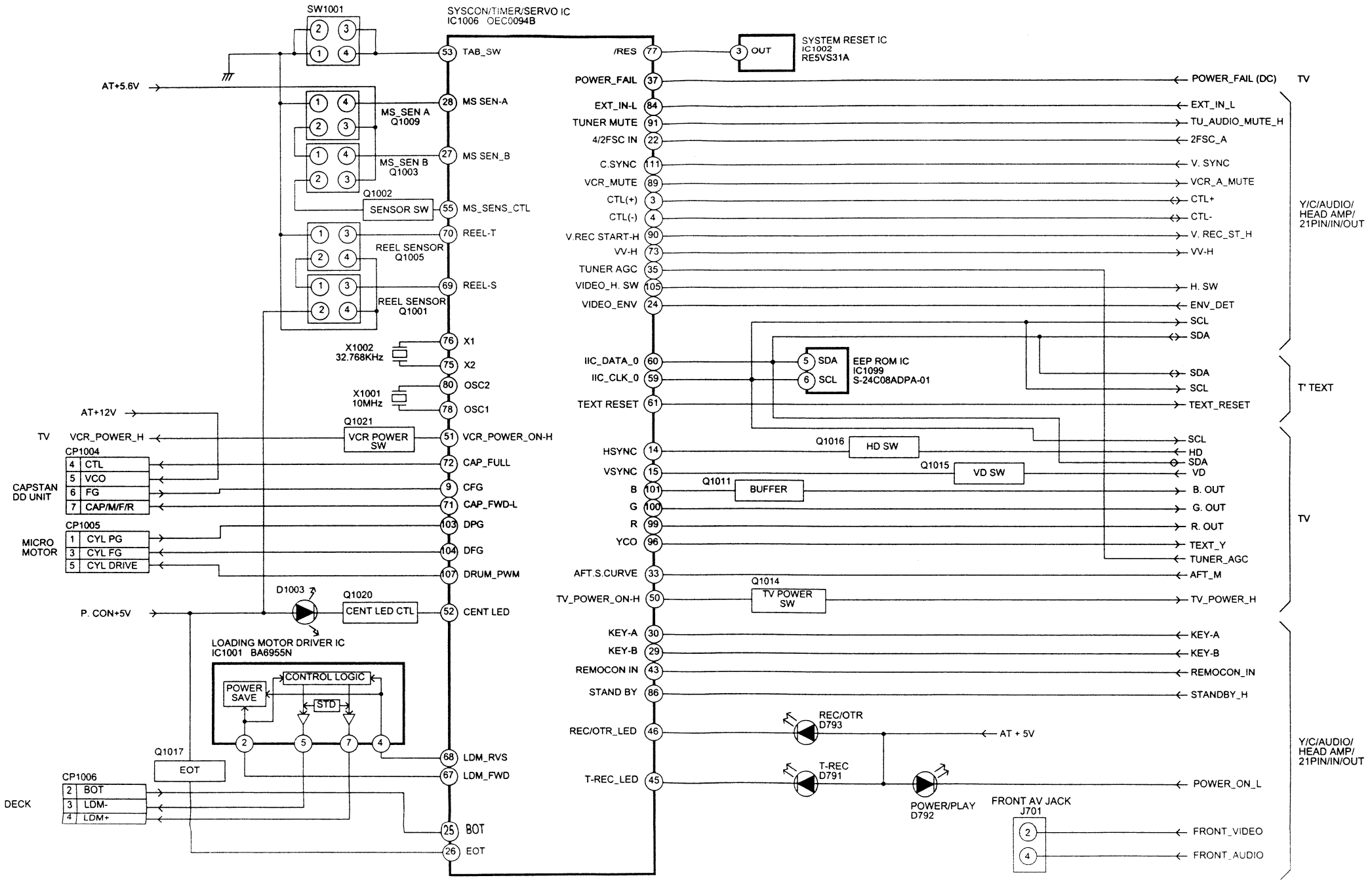
TV BLOCK DIAGRAM



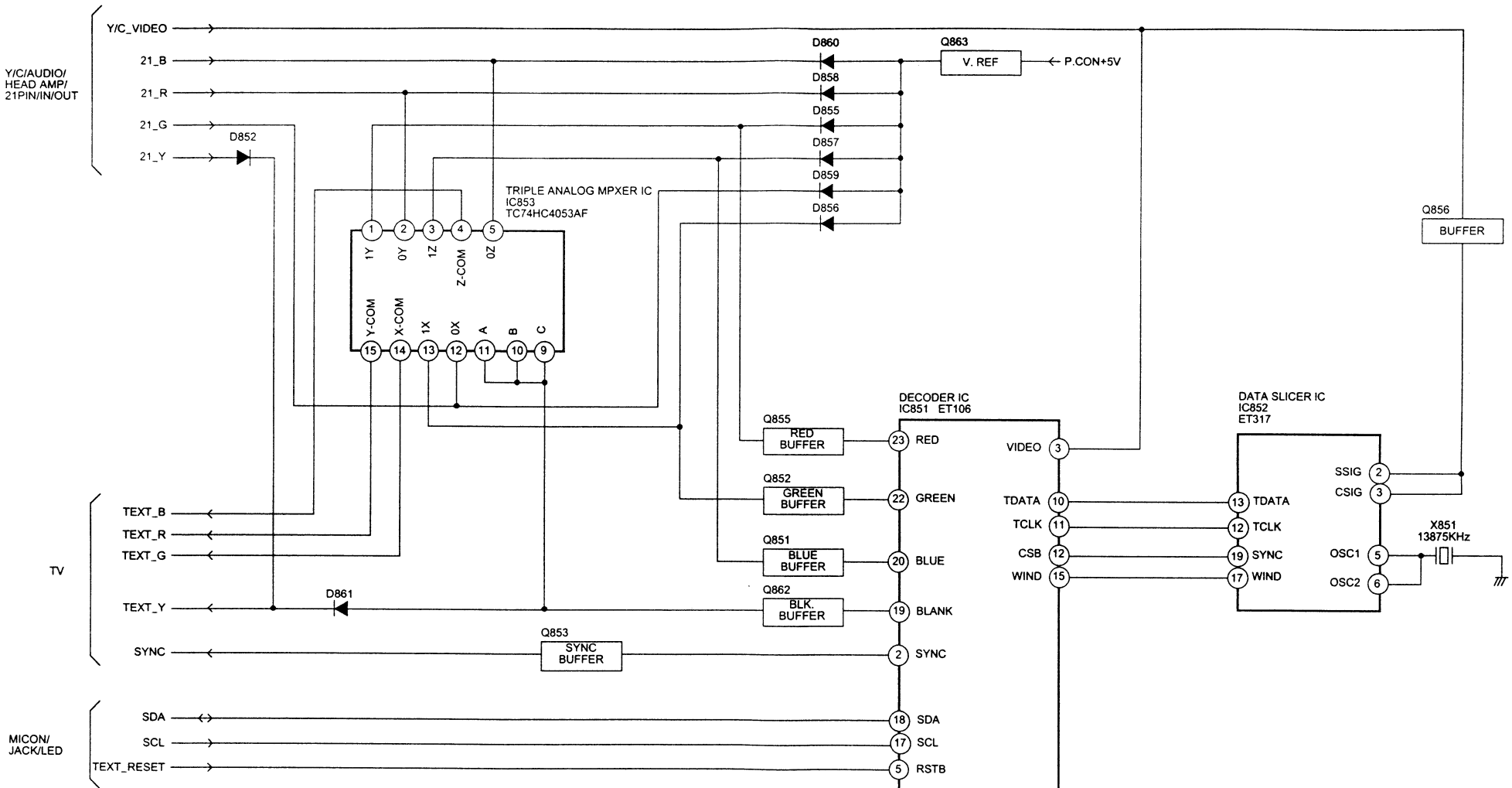
Y/C/AUDIO/HEAD AMP/21PIN/IN/OUT BLOCK DIAGRAM



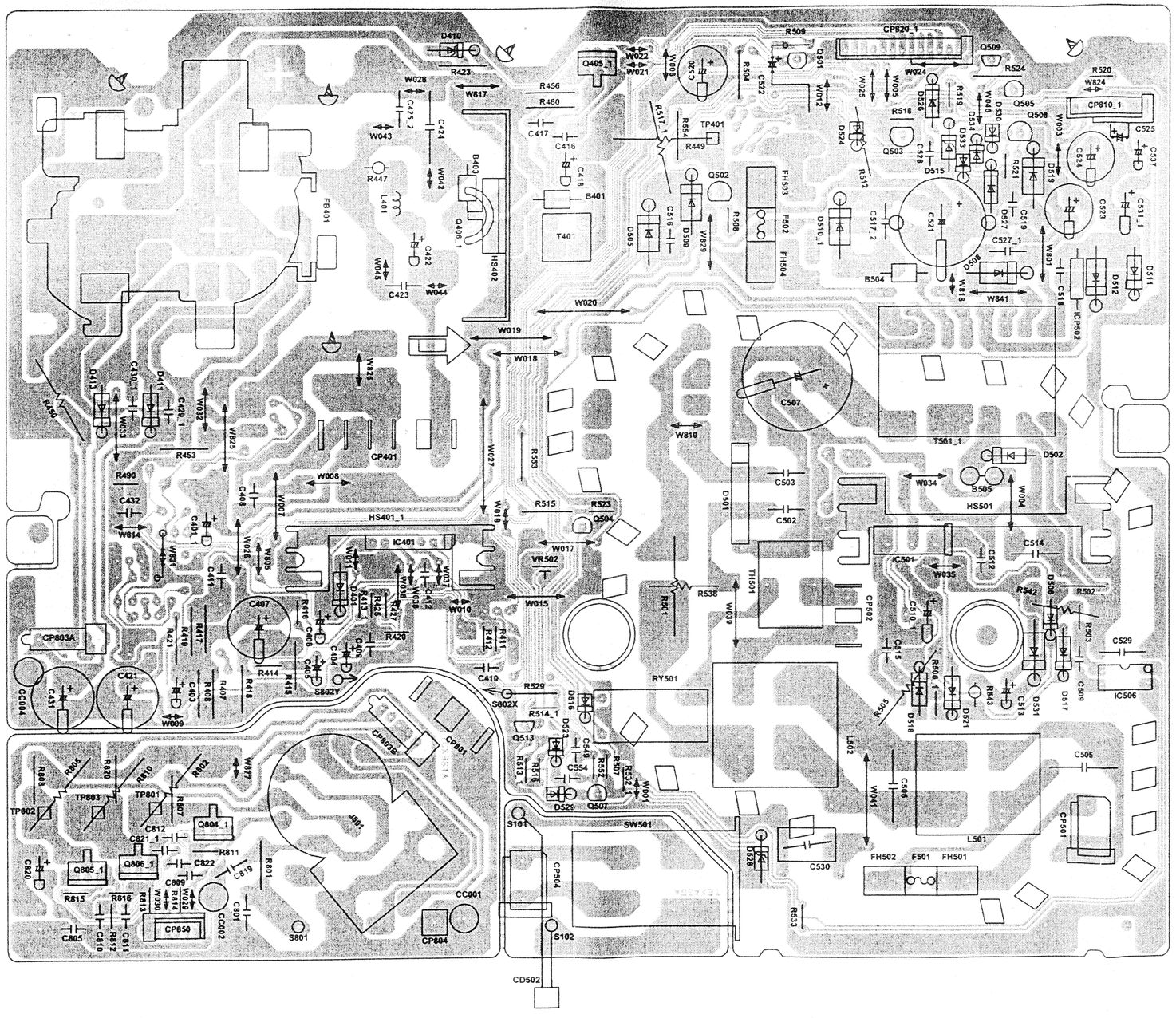
MICON/JACK/LED BLOCK DIAGRAM



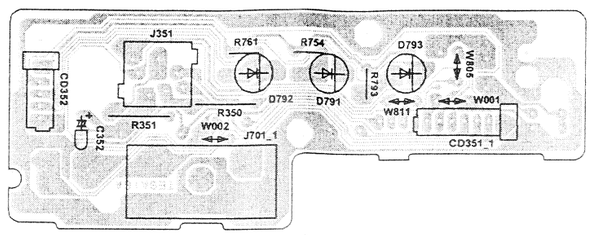
T' TEXT BLOCK DIAGRAM



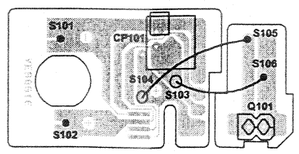
PRINTED CIRCUIT BOARDS
MAIN/CRT/POWER SW (INSERTED PARTS)
SOLDER SIDE



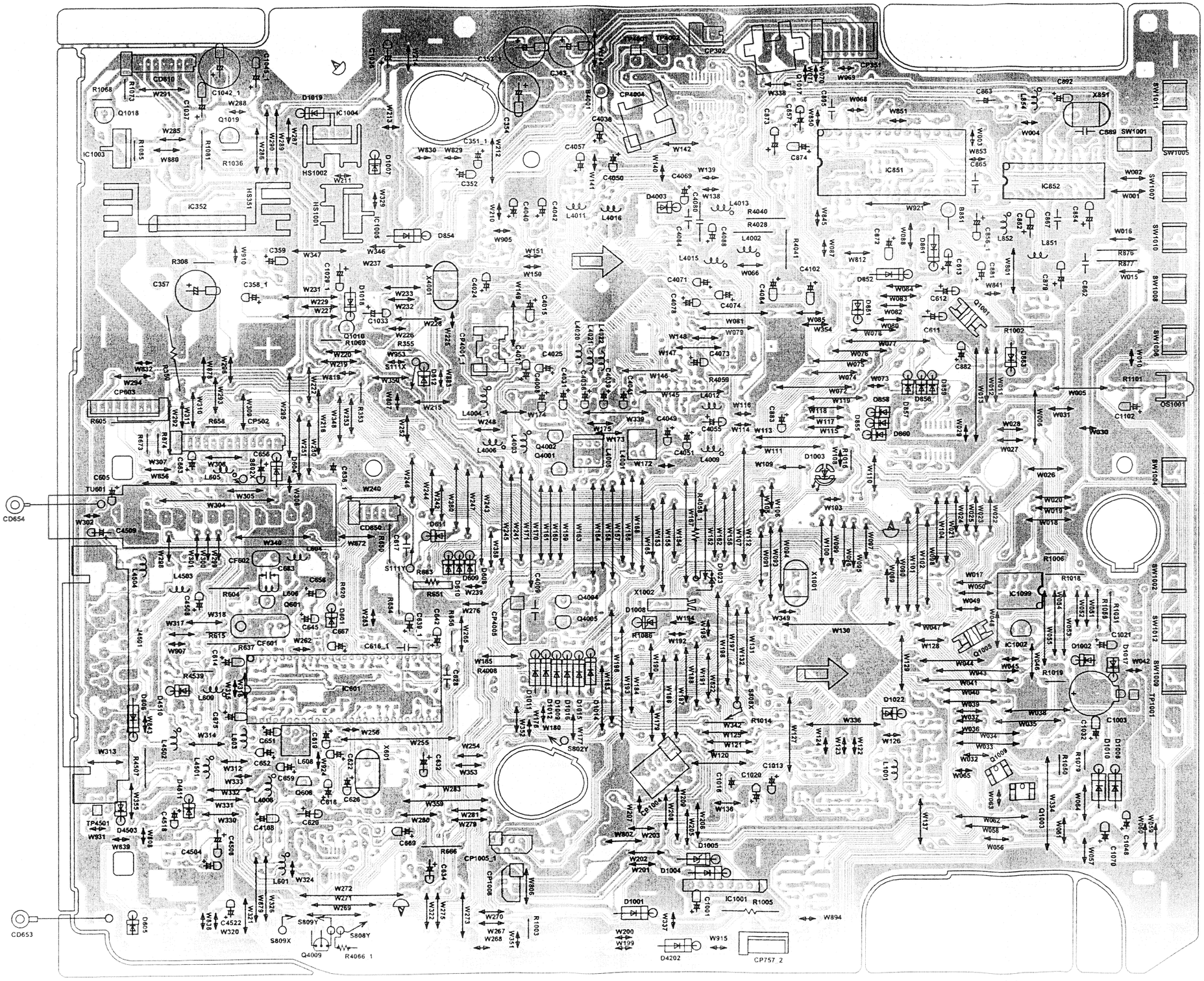
OPERATION
SOLDER SIDE



DECK
SOLDER SIDE



PRINTED CIRCUIT BOARDS
SYSCON (INSERTED PARTS)
SOLDER SIDE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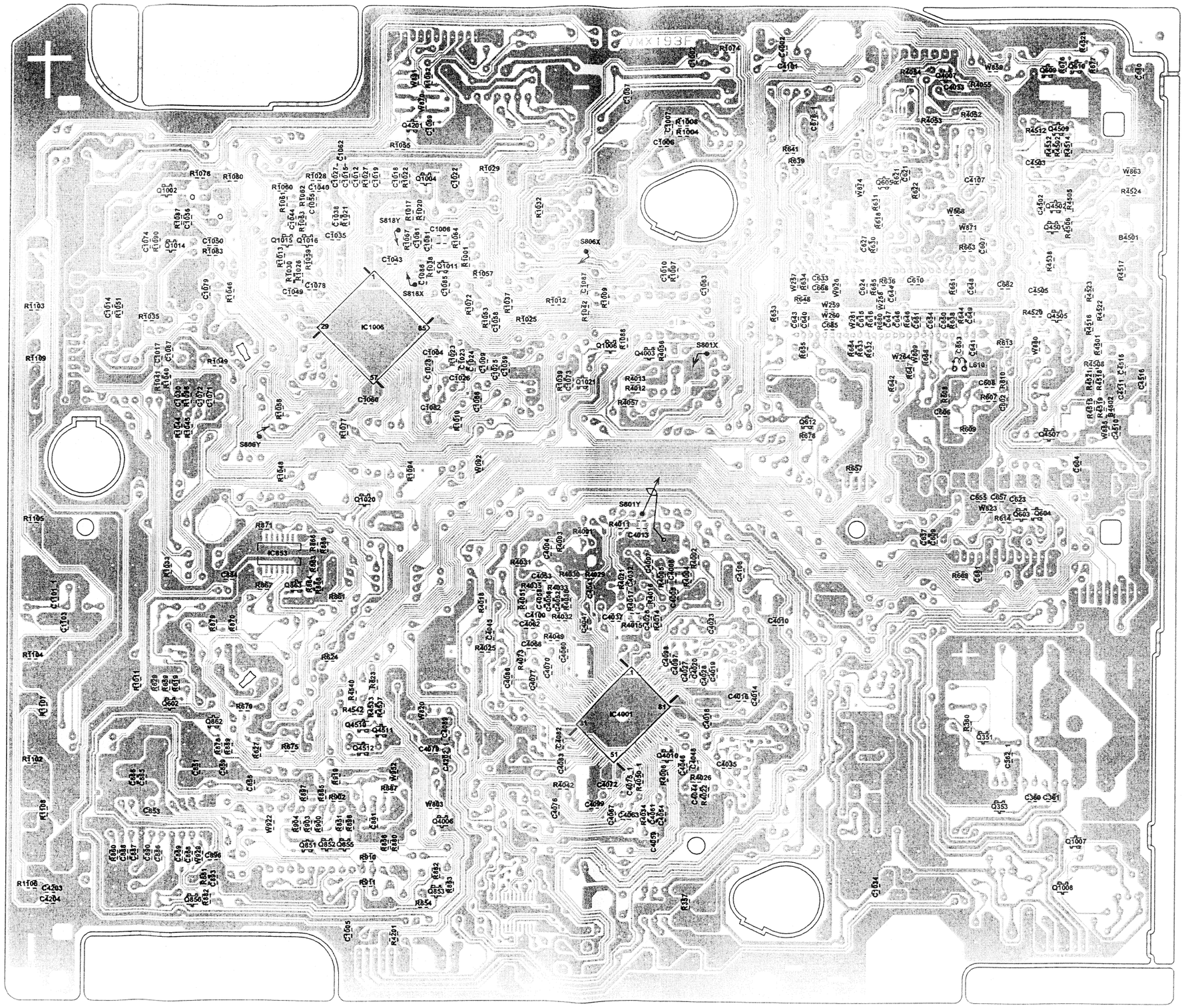
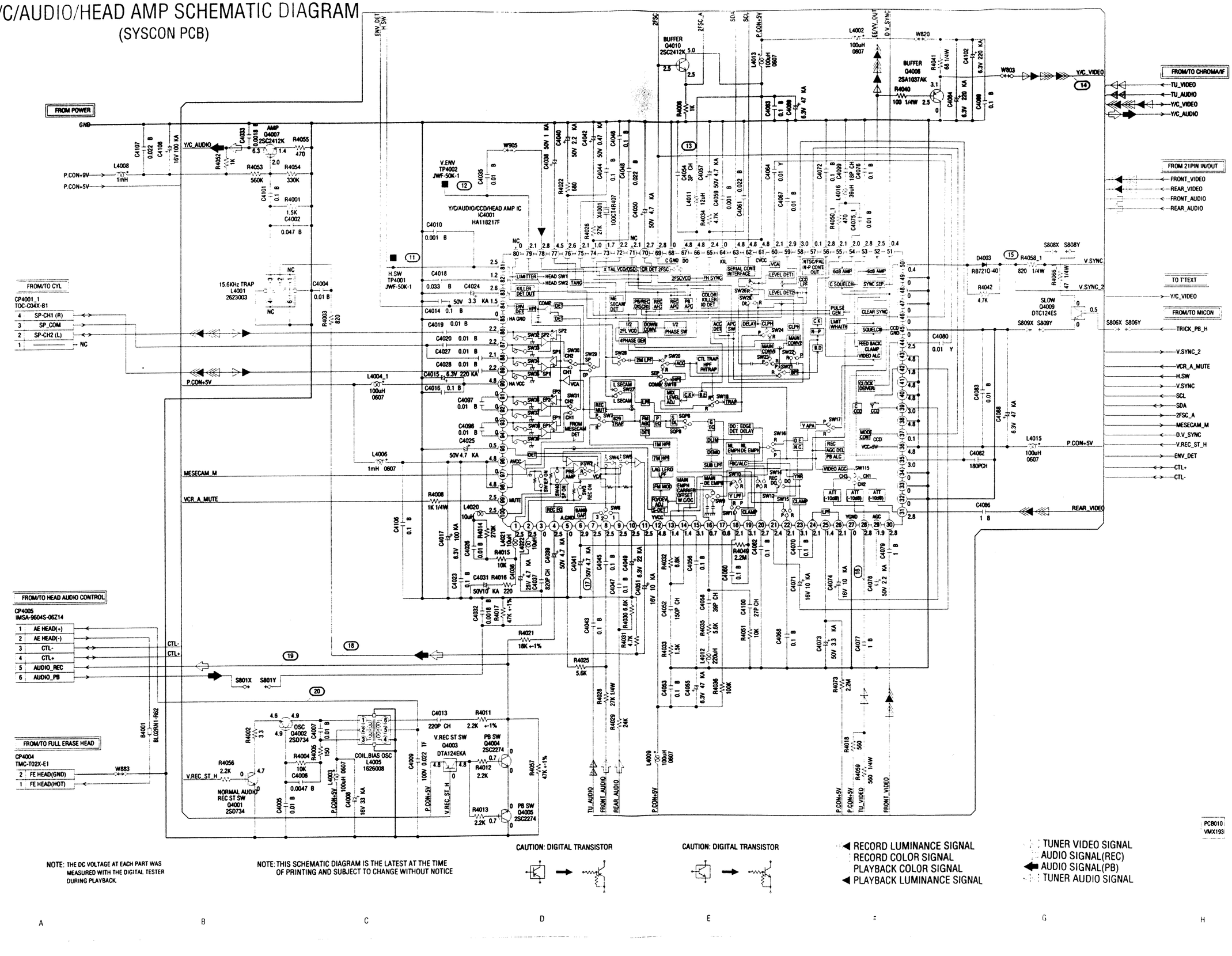
PRINTED CIRCUIT BOARDS
SYSCON (CHIP MOUNTED PARTS)
SOLDER SIDE



Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

(SYSCON PCB)

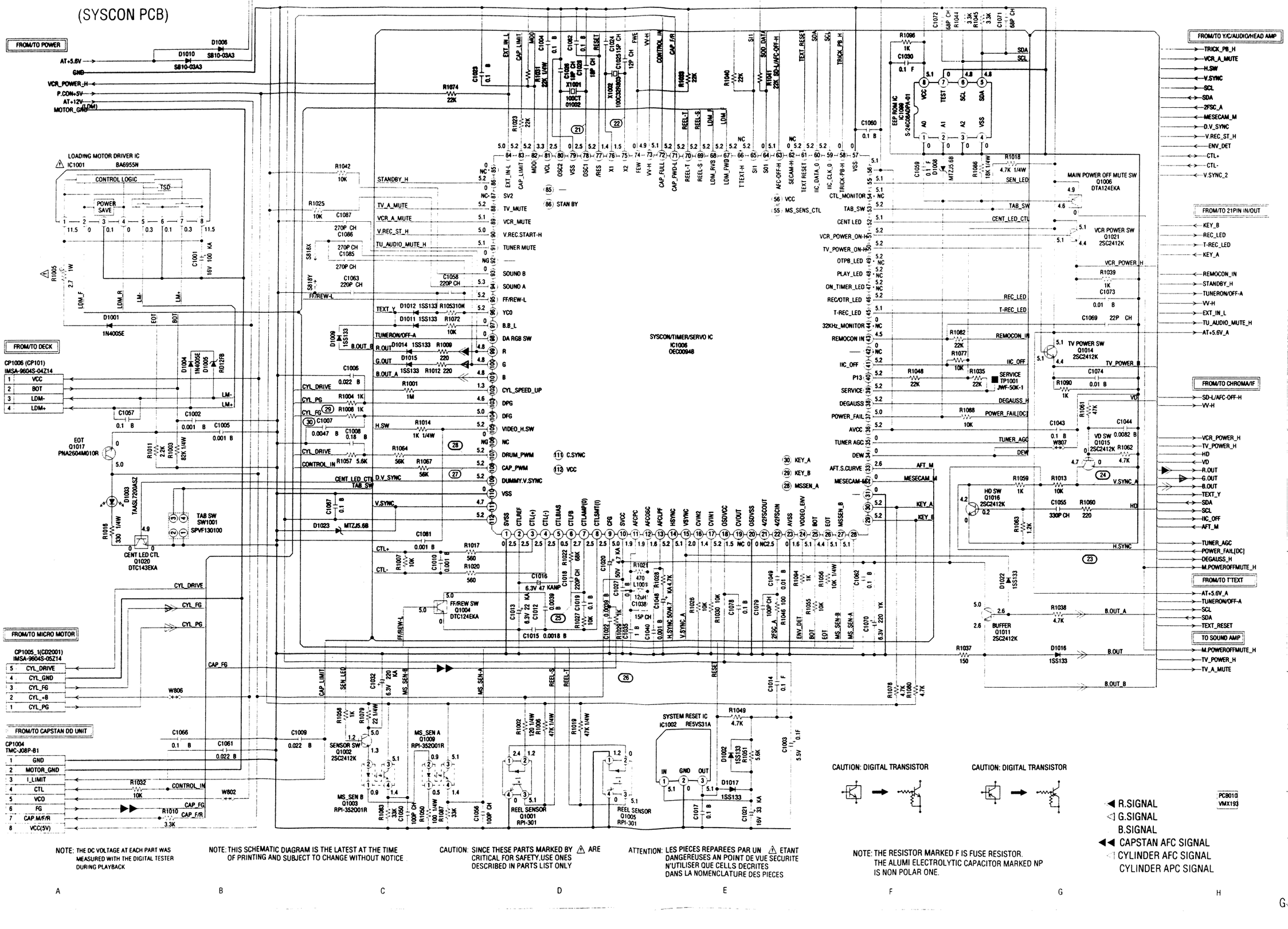


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

MICON SCHEMATIC DIAGRAM

(SYSCON PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK

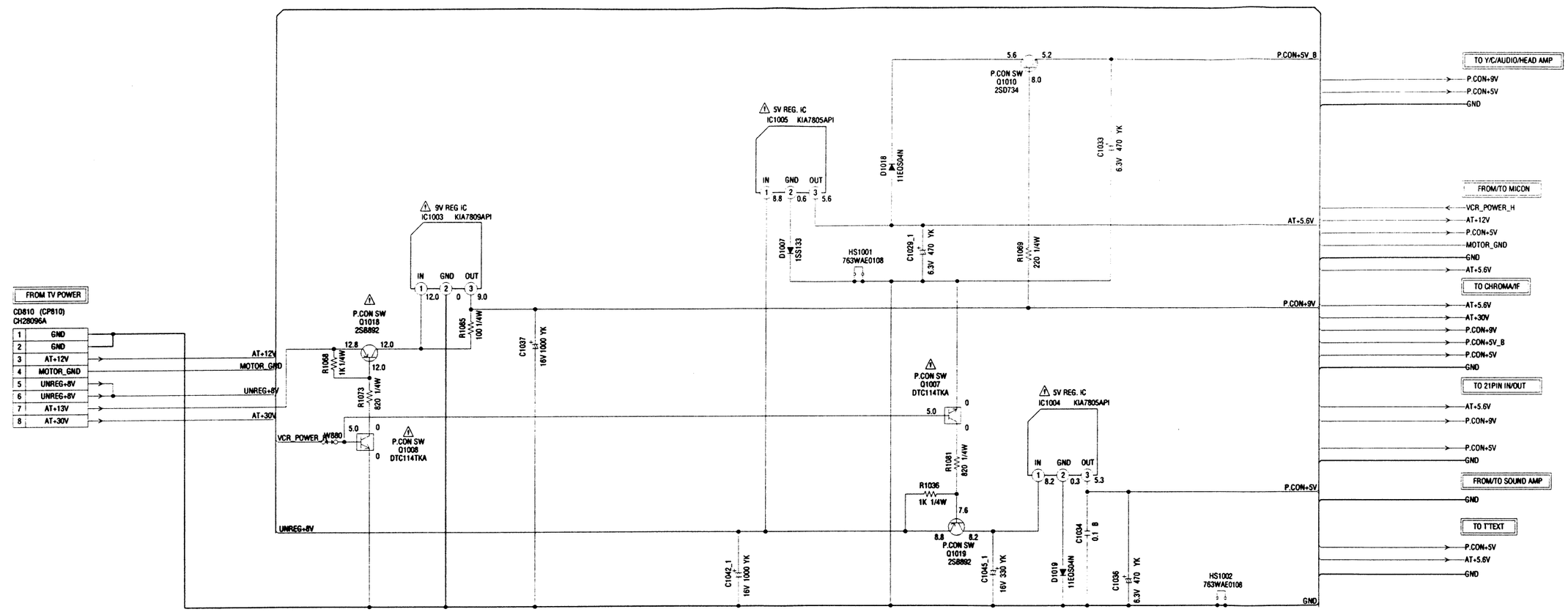
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

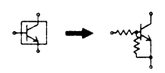
POWER SCHEMATIC DIAGRAM
(SYSCON PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



PCB010
VMX193

21PIN/IN/OUT SCHEMATIC DIAGRAM

(SYSCON PCB)

FROM/TO MICON
KEY_B
REC_LED
T-REC_LED
KEY_A
REMOCON_IN
STANDBY_H
TUNERON/OFF-A
VV-H
EXT_IN_L
TU_AUDIO_MUTE_H
AT+5.6V_A
W822
C1101_1
0.1 F
R1101
100 1/4W
C1102
6.3V 220 KA
OS1001
GP1U281Q
1 Vout
2 B+
3 GND
C1103
100P CH
CH DOWN
SW1010
EVQ21505R
REC/OTR
SW1009
EVQ21505R
STOP/EJECT
SW1006
EVQ21505R
PLAY
SW1004
EVQ21505R
FF/CUE
SW1012
EVQ21505R
REW/REV
SW1002
EVQ21505R
R1102
820
R1103
1K
R1104
1.5K
R1105
2.7K
R1109
6.8K
C4204
0.001 B
C4203
0.001 B
POWER ON/OFF
SW1011
EVQ21505R
CH UP
SW1008
EVQ21505R
VOL UP
SW1007
EVQ21505R
VOL DOWN
SW1005
EVQ21505R
P.CON+5V
R1106
820
R1107
1K
R1108
1.5K
TO OPERATION
CP757_2 (CD757)
8283_0512_00_000
POWER_ON_L
T-REC_LED
REC_LED
AT+5V
NC
W884
W891
W870
W915
FROM/TO OPERATION
CP354(CD354)
173979-7
GND
SP_OUT_L
SOUND_OUT_L
SOUND_GND
FRONT_A_IN_L
GND
FRONT_VIDEO_IN
FROM/TO SOUND AMP
SOUND_GND_A
SOUND+
SP_OUT
FROM POWER
AT+5.6V
P.CON+5V
GND
P.CON+9V
D4202
11ES1N
R4201
75
C4202_1
470P B
0.1
4.8
0
POWER ON SW
Q4201
DTC114EK
V.OUT
TP4501
JWF-50K-1
31
R4524
68
21_R
21_G
21_B
C4510
0.01 B
W931
W863
B4501
BLM21A601SPT
R4523
82
R4522
82
R4521
82
L4504
10uH
W885
C4509
16V 10 KA
32
W860
W907
P.CON+5V
R4533
10K
R4537
10K
21_Y
J4501
035_0_9985_05
NC
NC
Y SW
Q4510
2SC2412K
Y SW
Q4511
2SC2412K
R4540
1K
R4516
75
C4511
C4515
470PCH
C4516
470PCH
470P CH
W812
R4517
75
EXT_H
R4501
56K
R4518
5.6K
R4519
5.6K
L4503
10uH
C4508
50V 1 KA
R4520
150
B4502
BLM21A601SPT
R4508
10K
R4503
120K
TUNERON/OFF-A
R4542
10K
TUNER SW
Q4512
2SC2412K
MUTE SW
Q4505
2SC2412K
R4538
1.5K
D4510
1SS133
D4511
1SS133
TO Y/C/AUDIO/HEAD AMP
FRONT_VIDEO
FRONT_AUDIO
REAR_AUDIO
REAR_VIDEO
W859
TU_VIDEO
W808
C4518
50V 0.1 KA
TU_AUDIO
C4522
16V 10 KA
R4539
4.7K 1/4W
P.CON+9V
R4507
150 1/2W
L4502
100uH
W843
R4506
22K
BUFFER
Q4501
2SC2412K
BUFFER
Q4502
2SA1037AK
R4525
100
C4502
1 F
C4504
16V 10 KA
C4506
16V 100 KA
C4503
1 F
L4501
100uH
R4512
680
R4502
560K
AMP
Q4509
2SC2412K
R4514
330K
R4532
100
PERI SW
Q4507
2SC2412K
C4505
0.018 B
R4505
12K
D4503
1SS133
CD654
CH01388A
W853(W319)
W853(W328)
FROM/TO CHROMA/IF
TU_AUDIO
TU_VIDEO
EXT_H
SHIELD_GND
TO T'TEXT
21_Y
21_R
21_G
21_B
PCB010
VMX193

CAUTION: DIGITAL TRANSISTOR

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

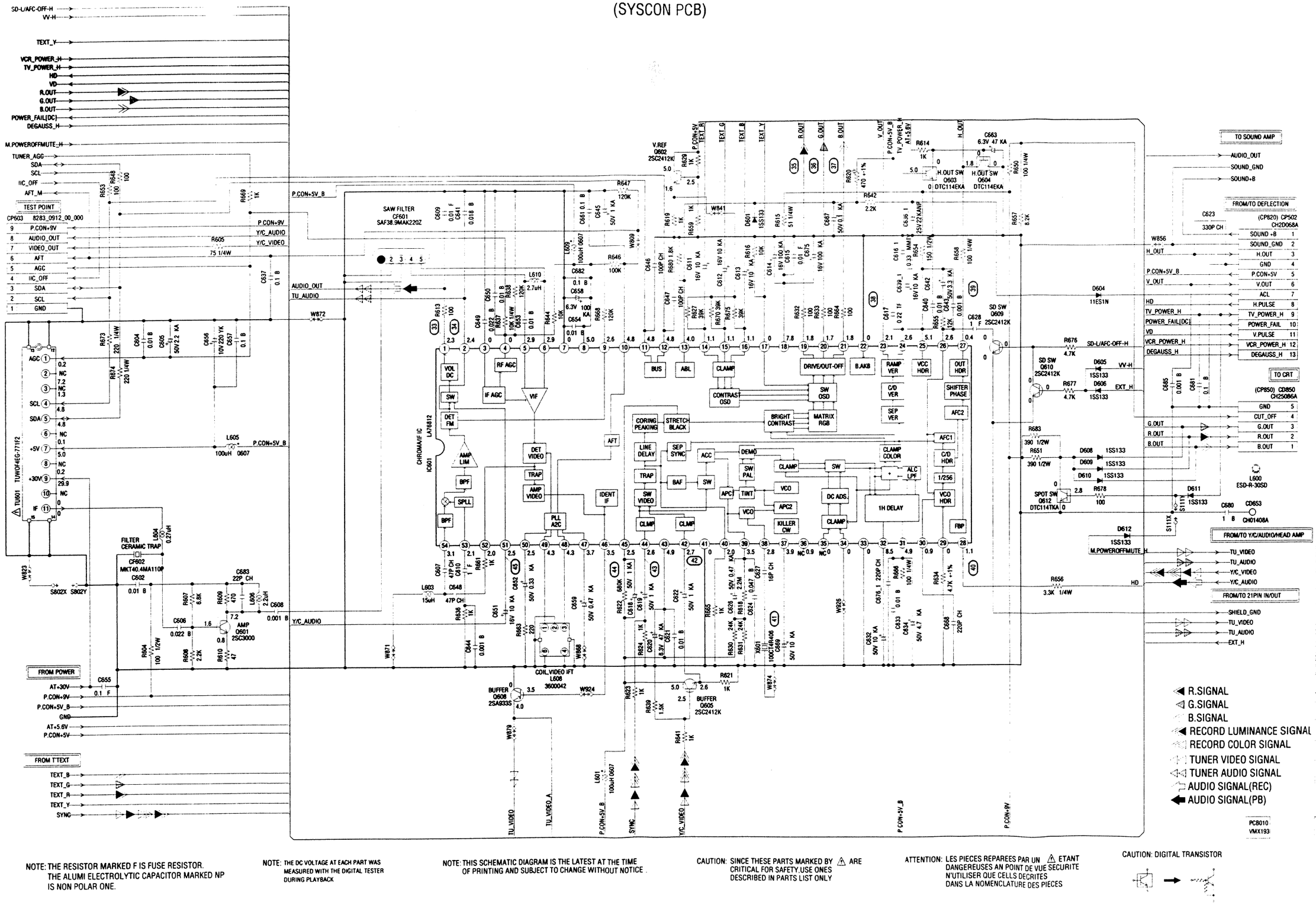
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

◀ R.SIGNAL
◁ G.SIGNAL
B.SIGNAL

AUDIO SIGNAL(REC)
◀ AUDIO SIGNAL(PB)
TUNER AUDIO SIGNAL
TUNER VIDEO SIGNAL

◀ PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
◀ RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL

CHROMA/IF SCHEMATIC DIAGRAM
(SYSCON PCB)



NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR.
THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

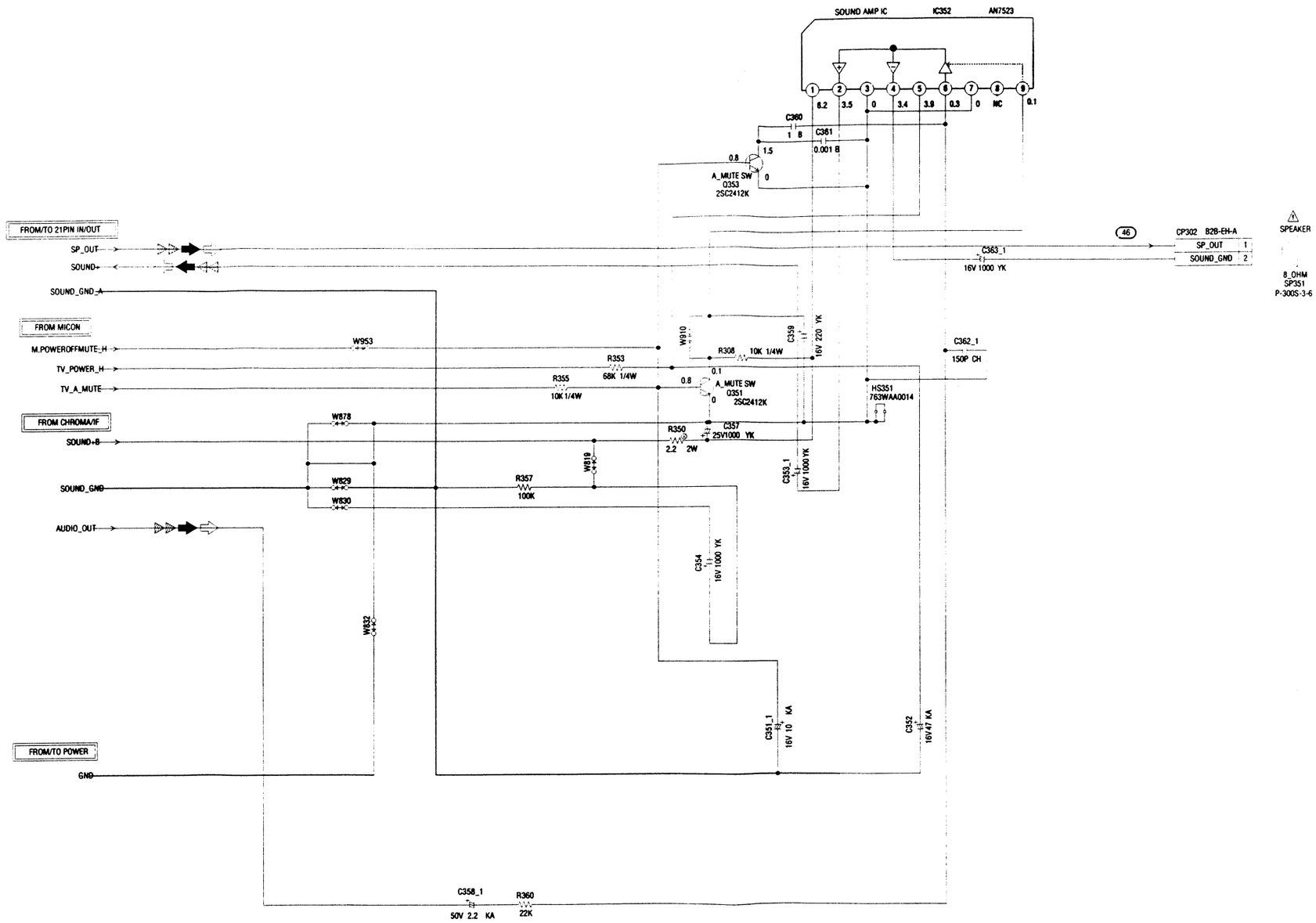
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CAUTION: DIGITAL TRANSISTOR

SOUND AMP SCHEMATIC DIAGRAM

(SYSCON PCB)



PCB010
VMX193

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

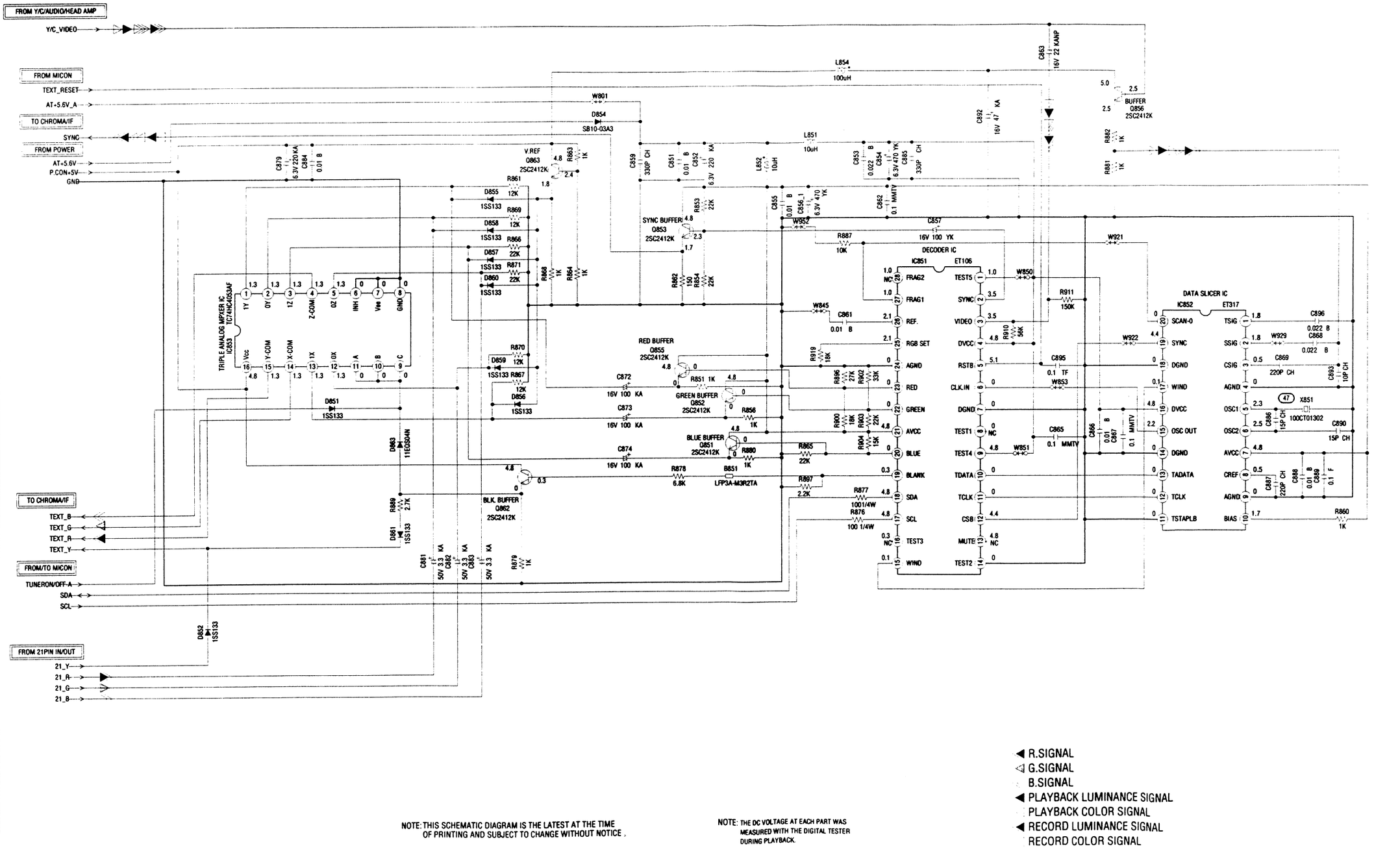
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
TUNER AUDIO SIGNAL

T'TEXT SCHEMATIC DIAGRAM

(SYSCON PCB)



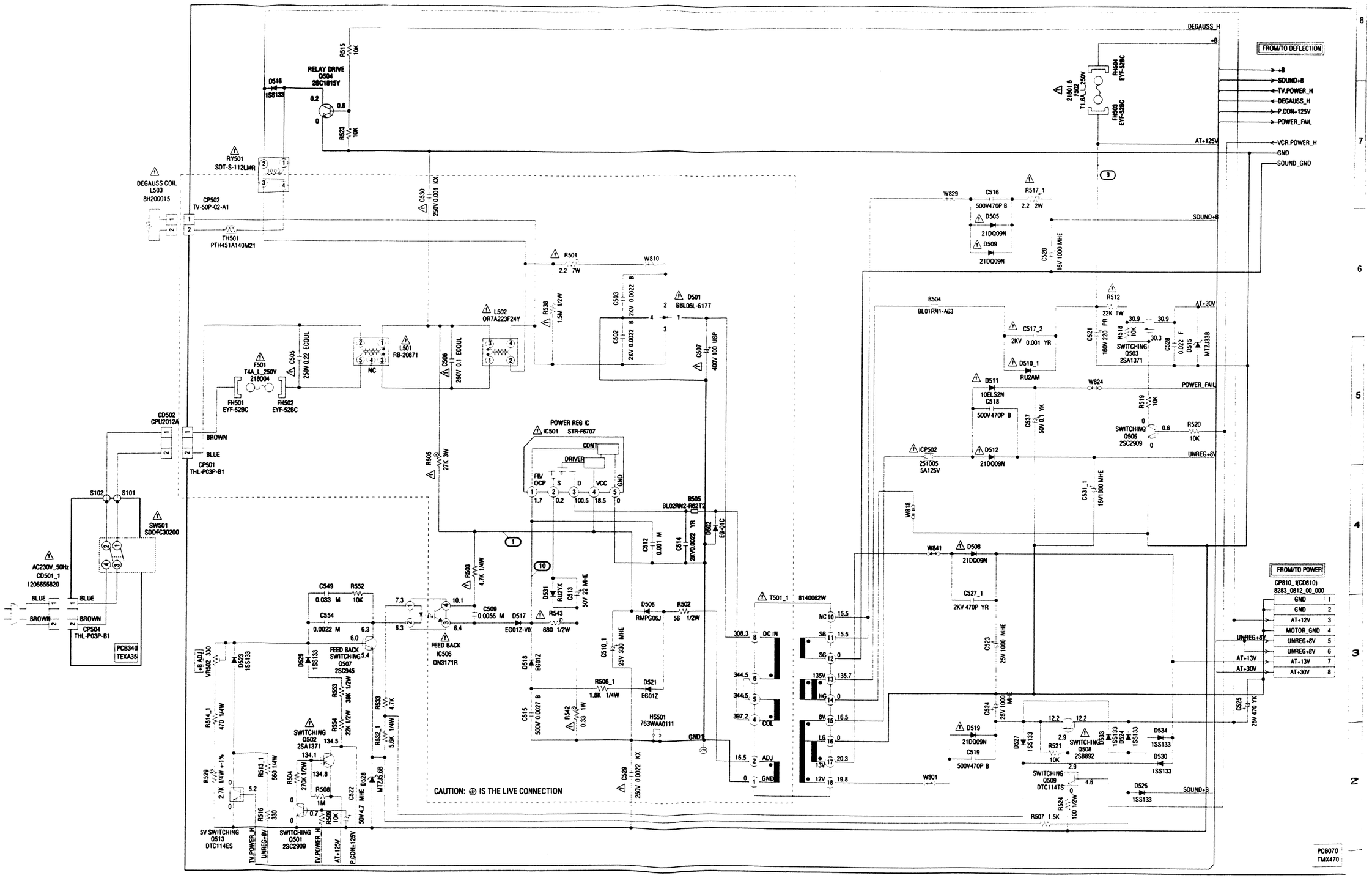
◀ R.SIGNAL
◁ G.SIGNAL
B.SIGNAL
◀ PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
◀ RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB010
VMX193

TV POWER SCHEMATIC DIAGRAM (MAIN PCB)



1 NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

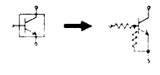
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY

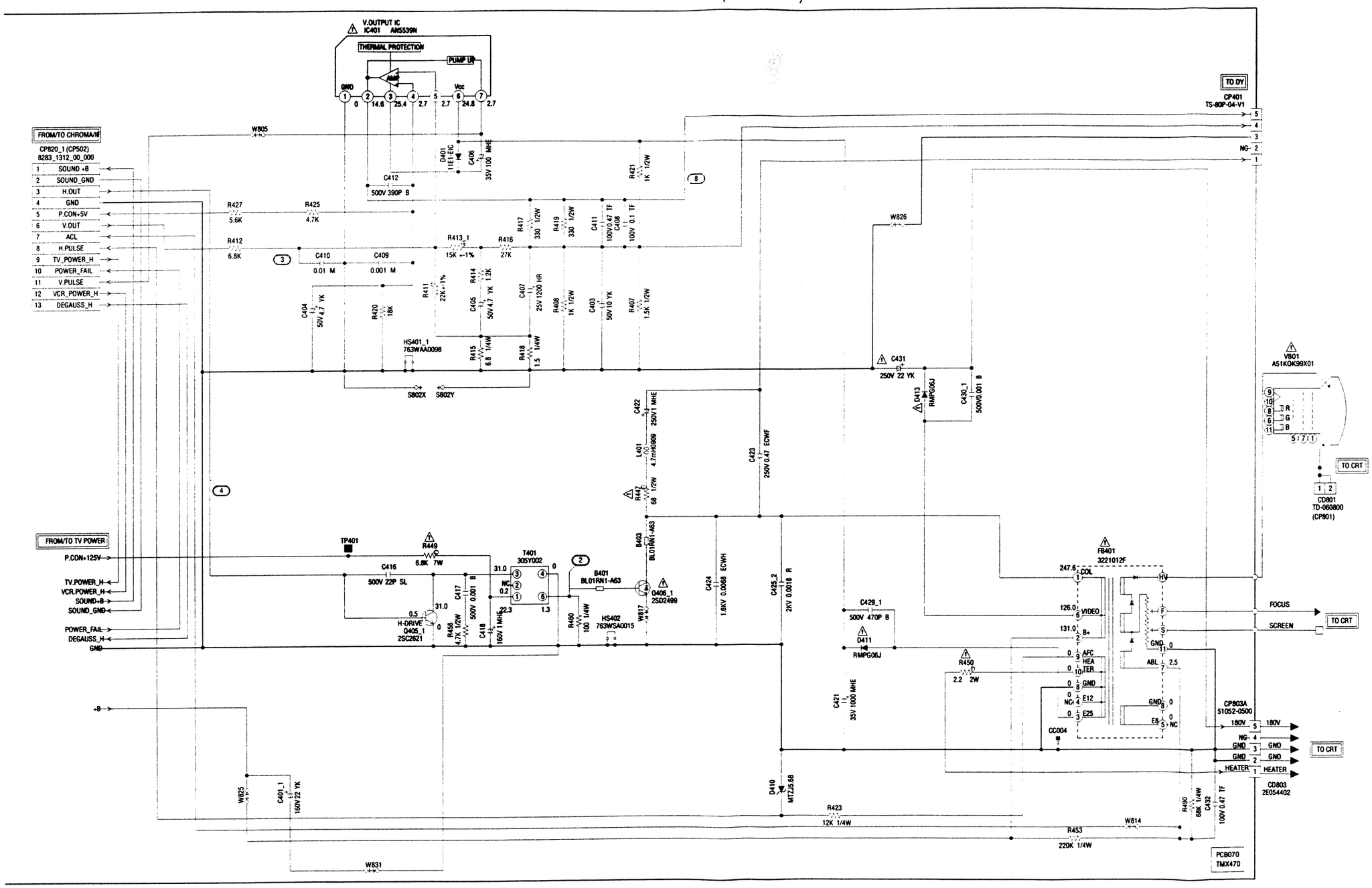
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CAUTION: DIGITAL TRANSISTOR



DEFLECTION SCHEMATIC DIAGRAM

(MAIN PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

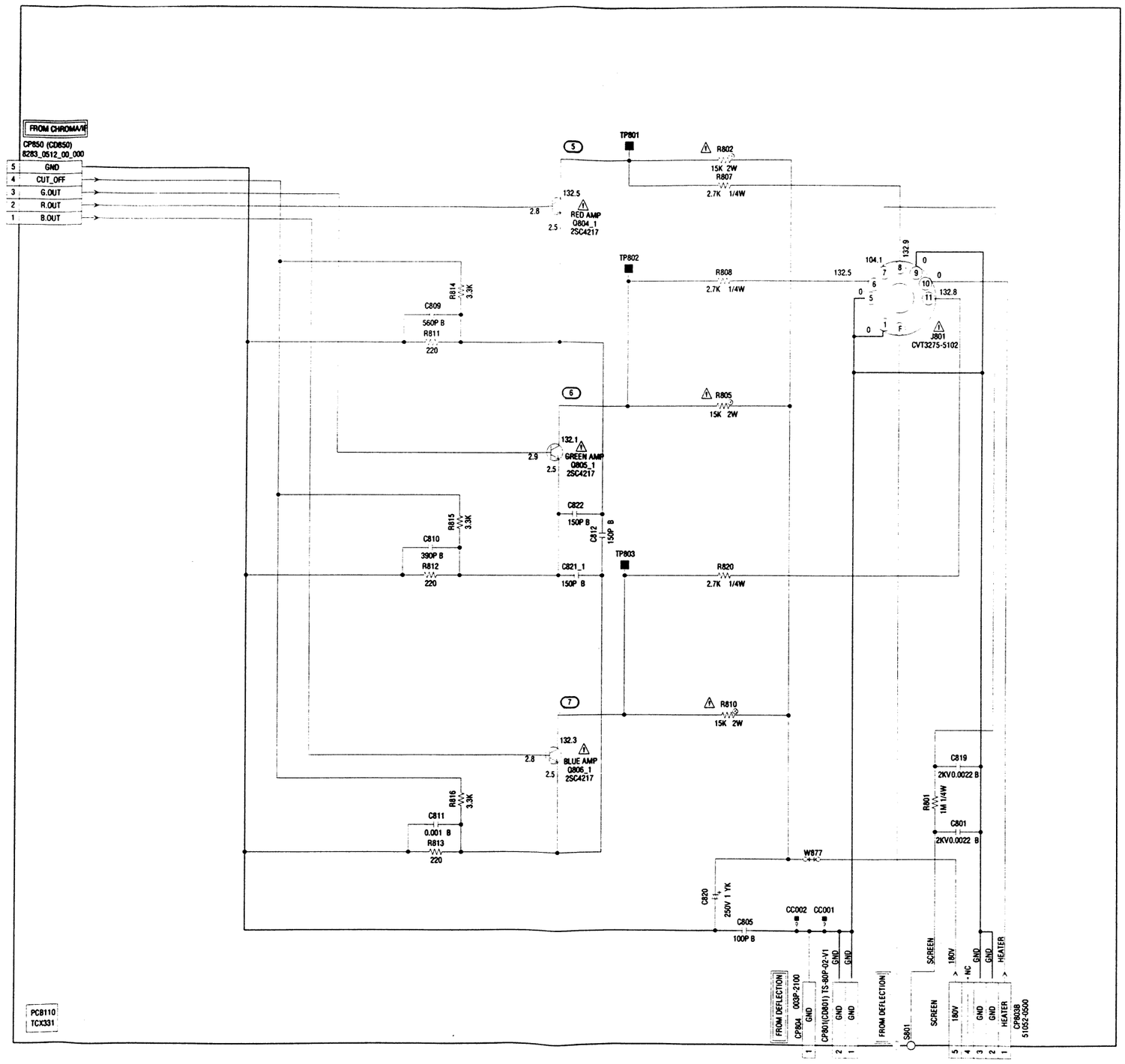
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CRT SCHEMATIC DIAGRAM (CRT PCB)



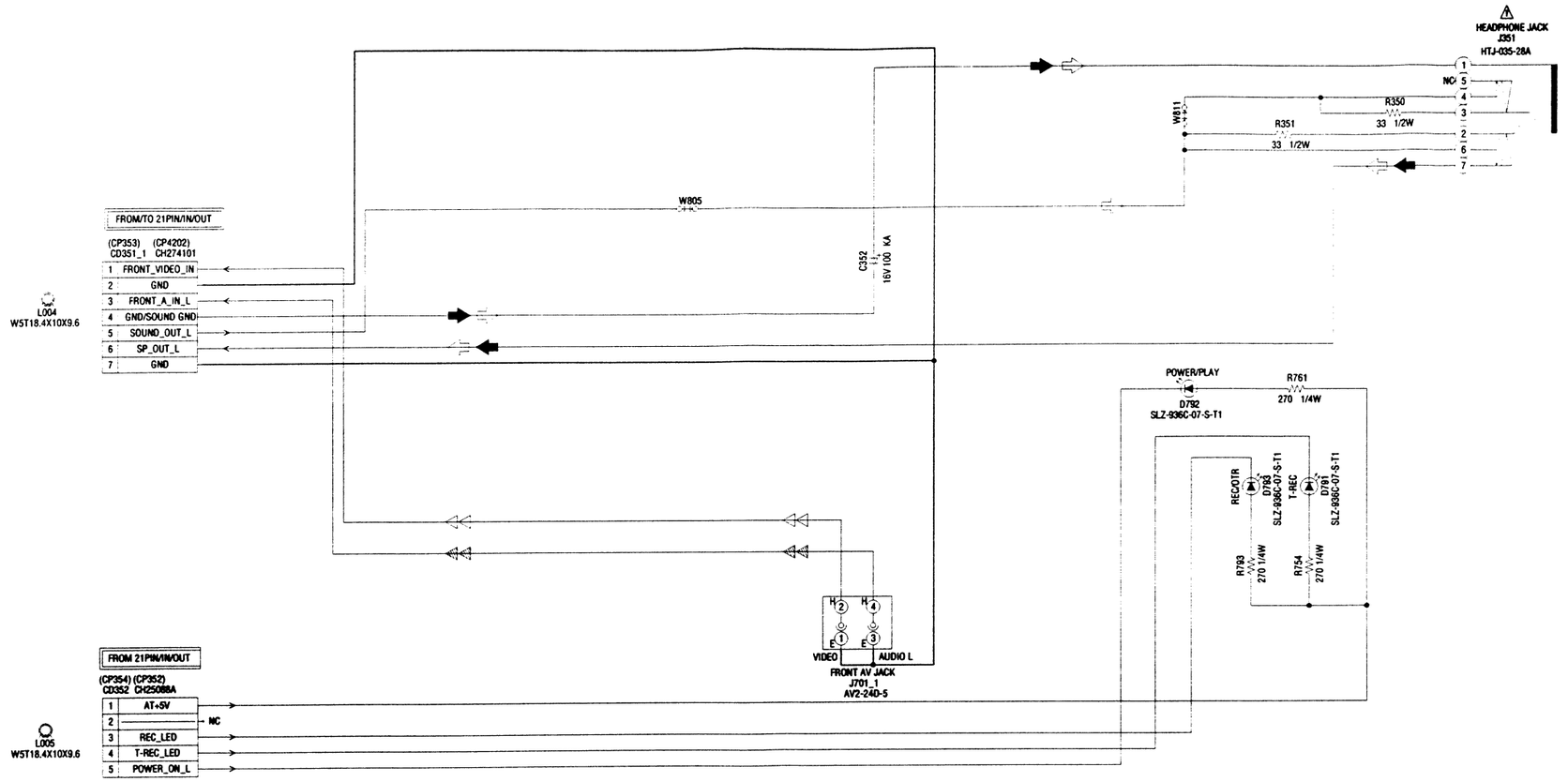
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

JACK/LED SCHEMATIC DIAGRAM
(OPERATION PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

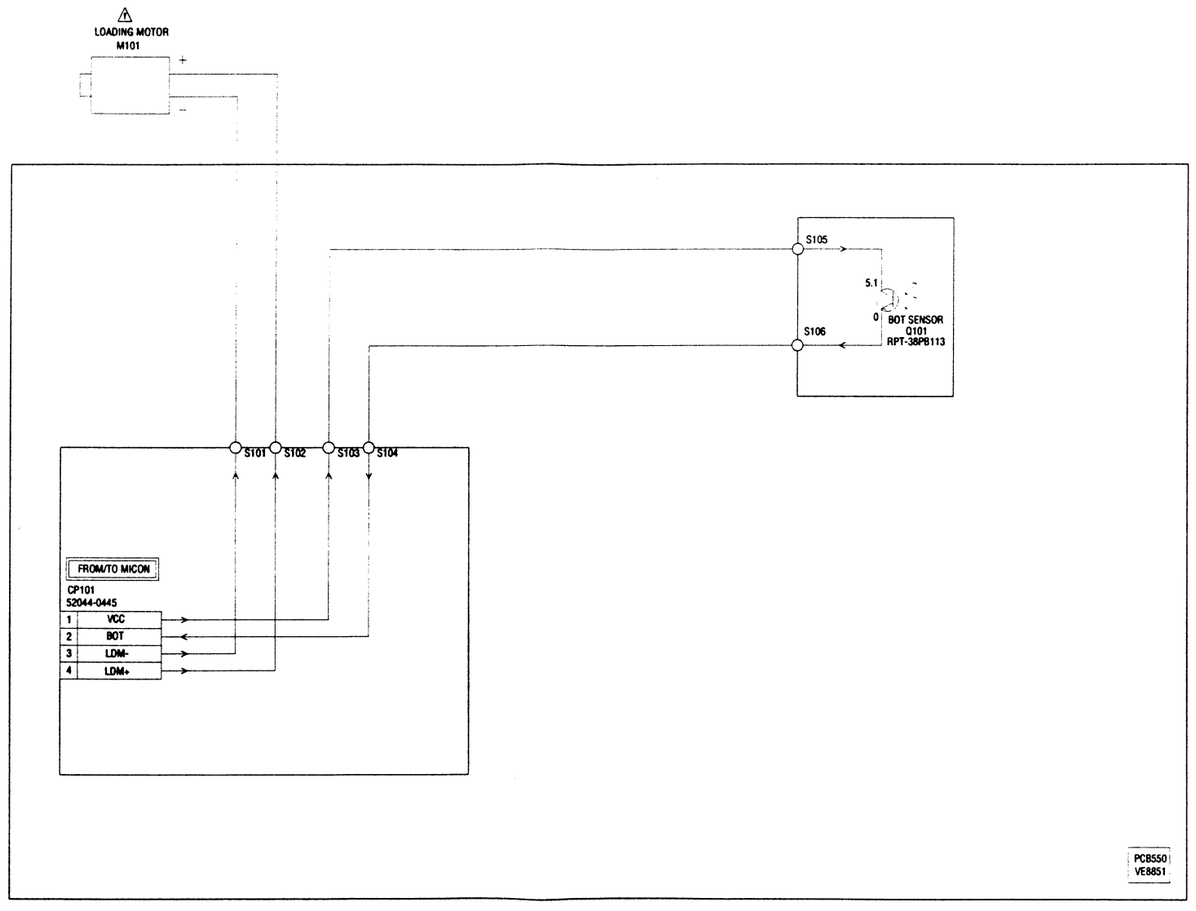
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
TUNER VIDEO SIGNAL
TUNER AUDIO SIGNAL

PCB030
TE9A16

DECK SCHEMATIC DIAGRAM
(DECK PCB)



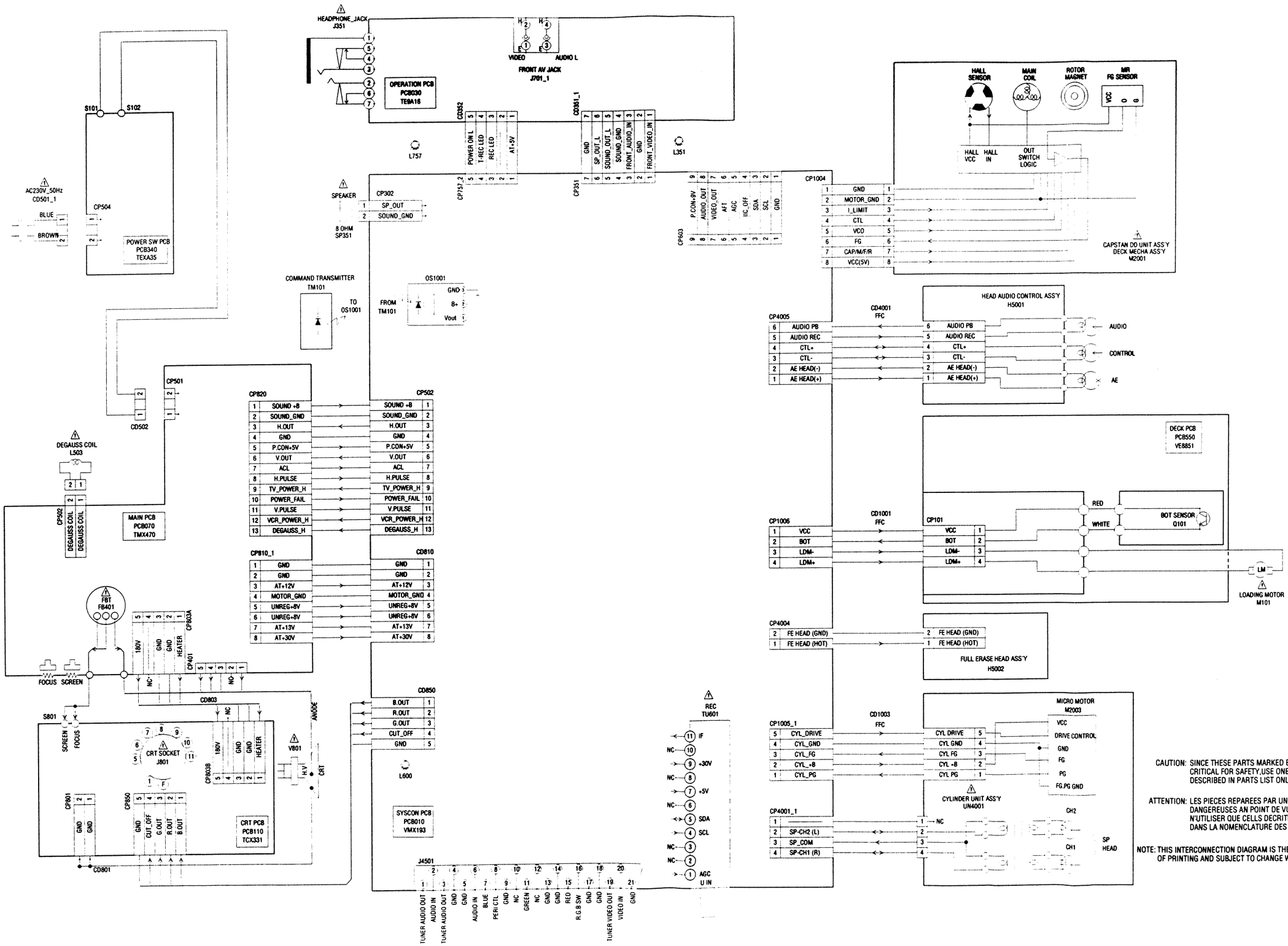
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY.USE ONES DESCRIBED IN PARTS LIST ONLY .

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

INTERCONNECTION DIAGRAM



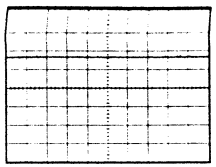
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

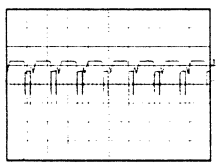
WAVEFORMS

TV POWER

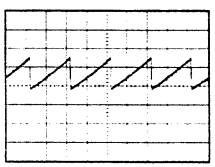


① 5V 0.1ms/div

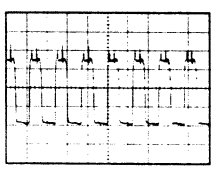
DEFLECTION



② 5V 50μs/div

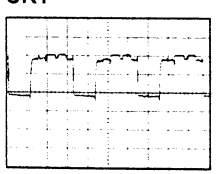


③ 0.5V 10ms/div

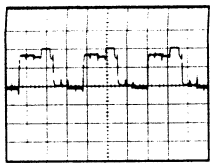


④ 200mV 50μs/div

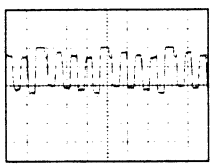
CRT



⑤ 2V 20μs/div

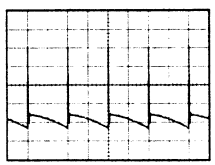


⑥ 20V 20μs/div



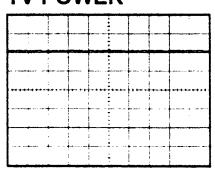
⑦ 20V 20μs/div

DEFLECTION

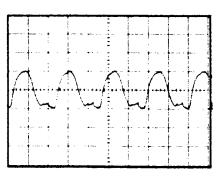


⑧ 10V 10ms/div

TV POWER

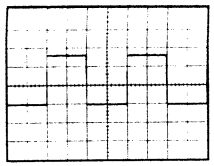


⑨ 20V 10ms/div

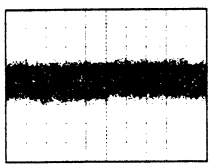


⑩ 2V 5μs/div

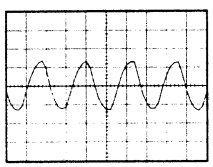
Y/C/AUDIO/HEAD AMP



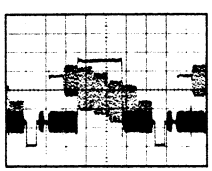
⑪ PB
2V 10ms/div



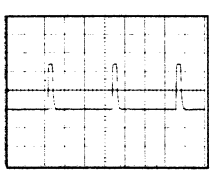
⑫ PB
10mV 5ms/div



⑬ POWER ON
200mV 50ns/div



⑭ POWER ON
0.5V 10μs/div

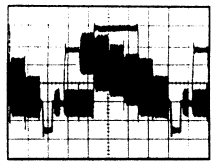


⑮ POWER ON
2V 20μs/div

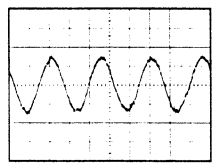
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

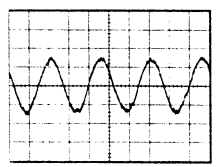
MICON



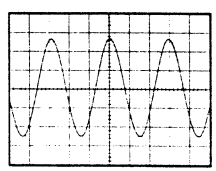
⑯ POWER ON
200mV 10μs/div



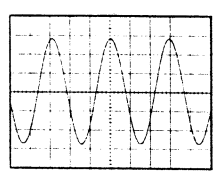
⑰ POWER ON
50mV 1ms/div



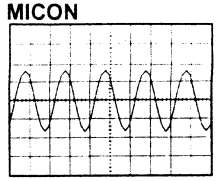
⑱ POWER ON
50mV 1ms/div



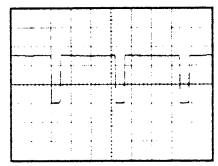
⑲ REC
10V 5μs/div



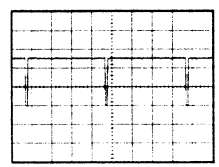
⑳ REC
10V 5μs/div



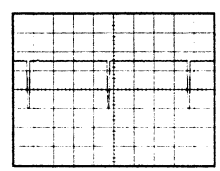
㉑ POWER ON
1V 50ns/div



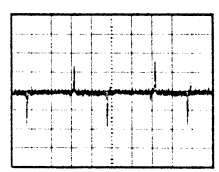
㉒ POWER ON
1V 20μs/div



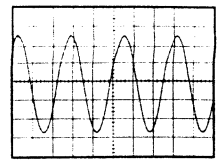
㉓ POWER ON
2V 20μs/div



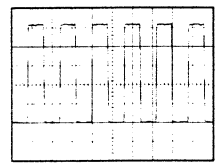
㉔ POWER ON
2V 5ms/div



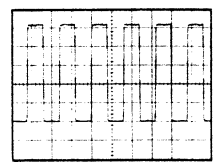
㉕ PB
50mV 10ms/div



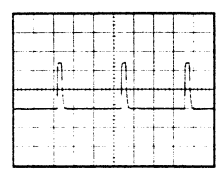
㉖ PB
50mV 0.5ms/div



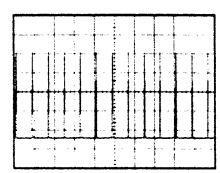
㉗ PB
1V 0.5μs/div



㉘ PB
1V 0.5μs/div



㉙ PB
2V 20μs/div

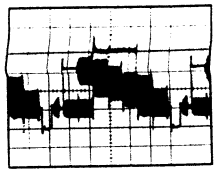


㉚ PB
1V 50ms/div

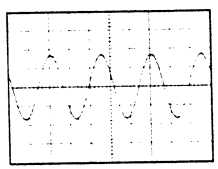
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

21PIN/IN/OUT

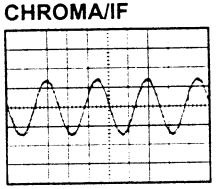


(31) POWER ON
0.5V 10μs/div

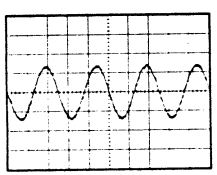


(32) POWER ON
20mV 1ms/div

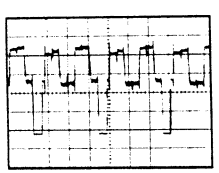
CHROMA/IF



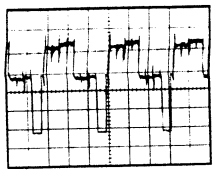
(33) POWER ON
5mV 1ms/div



(34) POWER ON
5mV 1ms/div

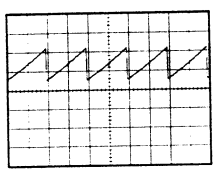


(35) POWER ON
0.5V 20μs/div

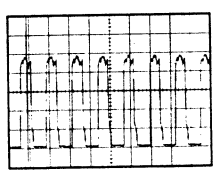


(36) POWER ON
0.5V 20μs/div

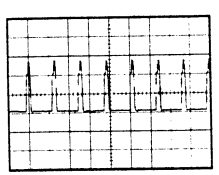
(37) POWER ON
0.5V 20μs/div



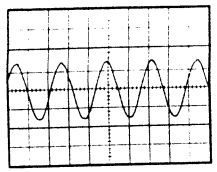
(38) POWER ON
0.5V 10ms/div



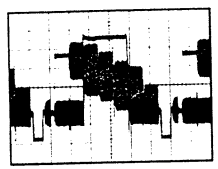
(39) POWER ON
200mV 50μs/div



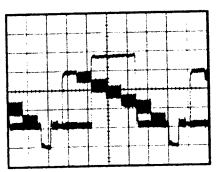
(40) POWER ON
2V 50μs/div



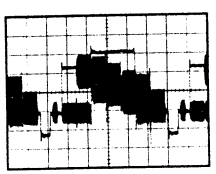
(41) POWER ON
200mV 0.1μs/div



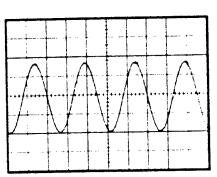
(42) POWER ON
200mV 10μs/div



(43) POWER ON
10mV 10μs/div



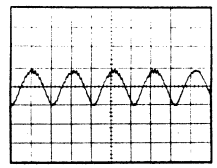
(44) POWER ON
0.5V 10μs/div



(45) POWER ON
200mV 1ms/div

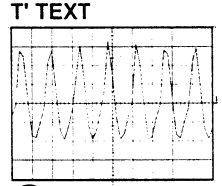
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

SOUND AMP



(46) REC
0.5V 0.5ms/div

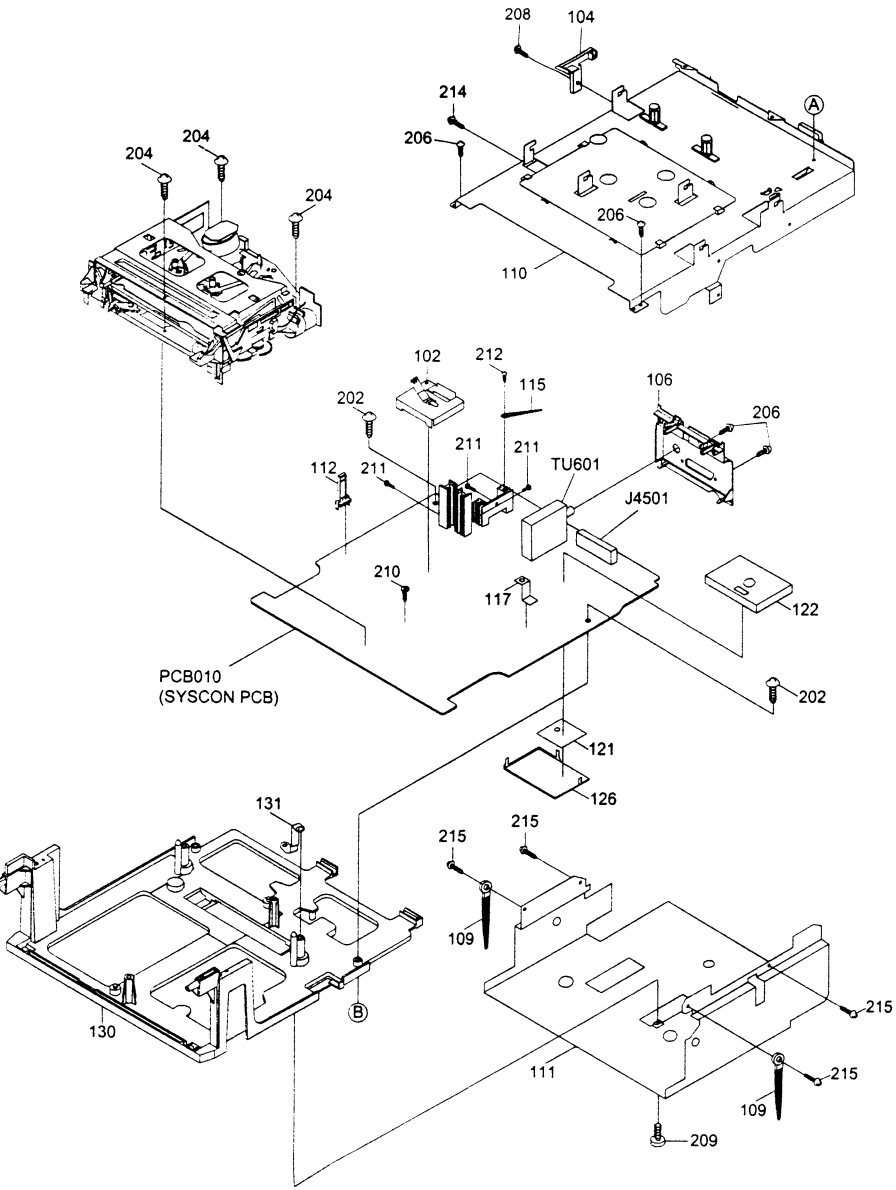
T' TEXT



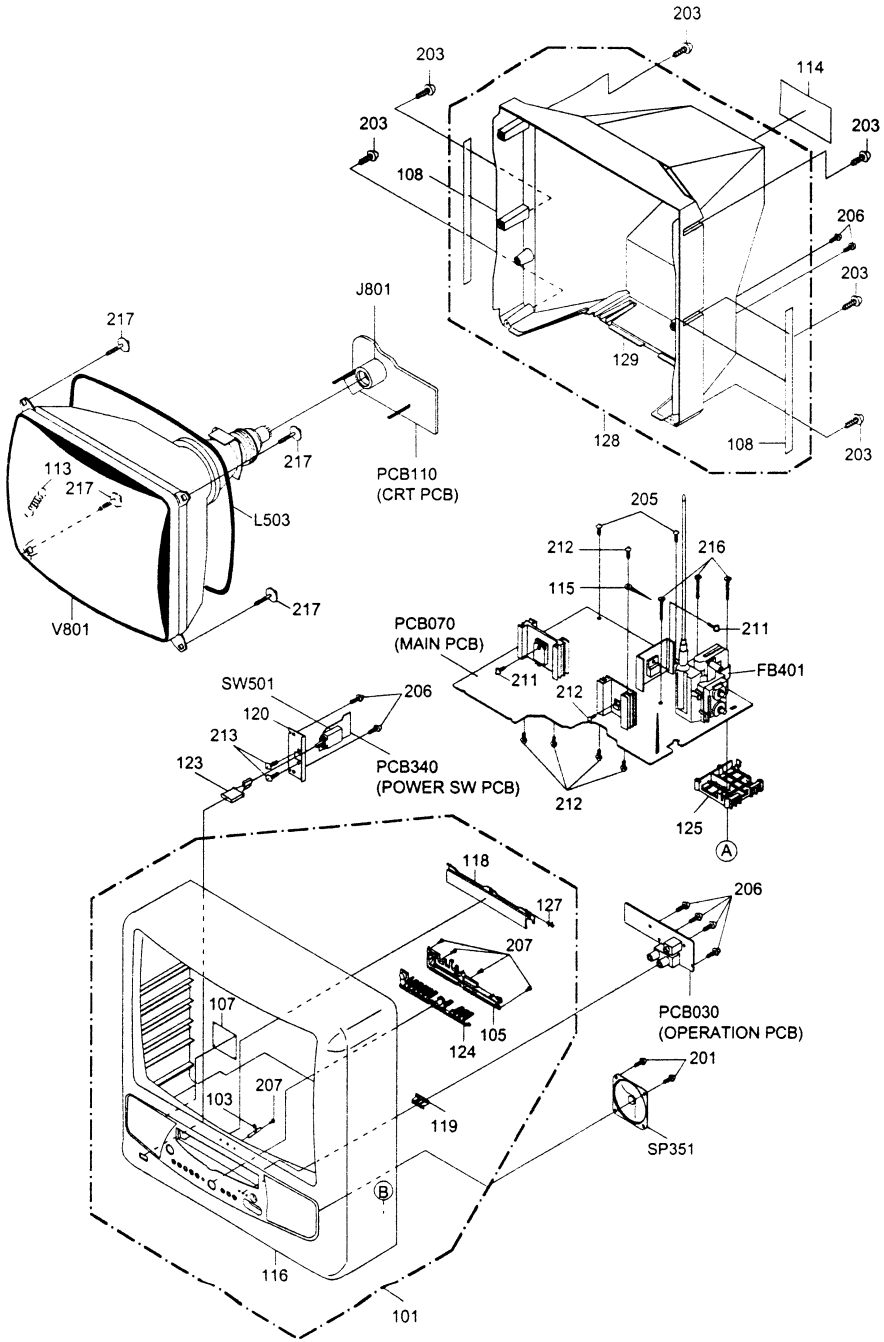
(47) POWER ON
200mV 50ns/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

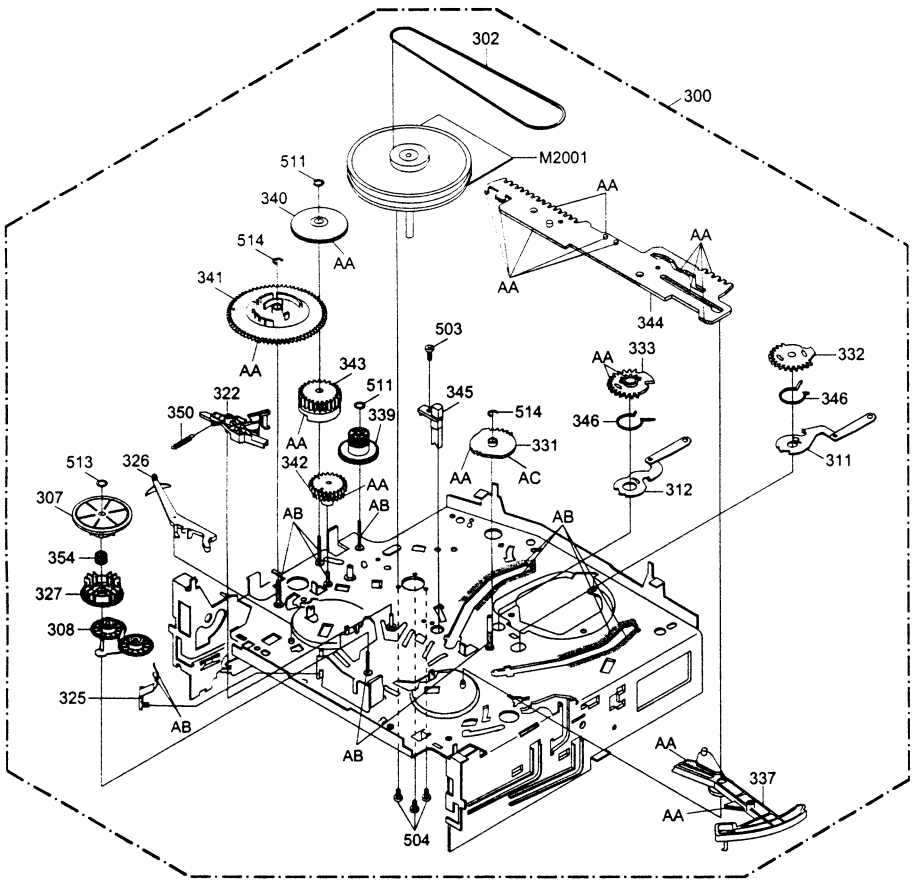
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW



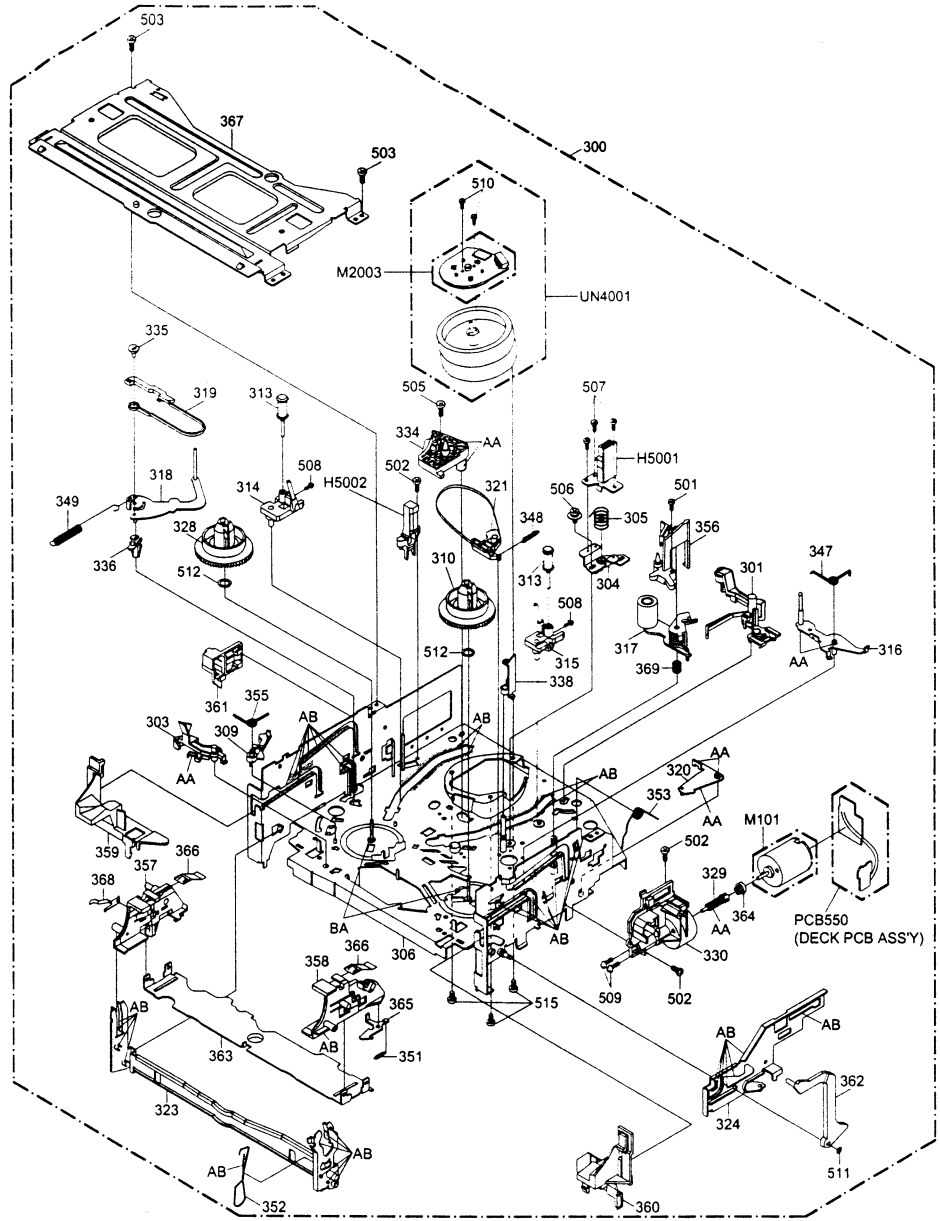
CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FL-721	AC
OIL	FL OIL No. 6115	BA

NOTE: Applying positions AA, AB, AC and BA for the grease or oil are displayed for this section. Check if the correct grease or oil is applied for each position.

CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FL-721	AC
OIL	FL OIL No. 6115	BA

NOTE: Applying positions AA, AB, AC and BA for the grease or oil are displayed for this section. Check if the correct grease or oil is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
101	A58607V720K	CABINET,FRONT ASSY		
102	752WSA0213	SHIELD,CASE HEAD AMP ASS'Y		
103	713WPAA044	GUIDE,REMOCON		
104	761WPA0151	HOLDER,W/PCB		
105	735WPAA356	BUTTON,BASE		
106	771WPA0232	PLATE,JACK		
107	800WQAA001	FELT SHEET		75x75
108	800WQ00066	FELT SHEET		220x9xT0.5
109	899EFBA001	WIRING CLIP		
110	752WSAA032	PLATE,DECK SHIELD ASS'Y		
111	752WSA0246	PLATE,SHIELD BOTTOM		
112	85OP700036	HOLDER EOT SENSOR		
113	741WUA0004	SPRING,EARTH		
114	722566A003	SHEET,RATING		
115	8995034000	CORD CLIP UL CO.		
116	701UPJA081	CABINET,FRONT		
117	753WSA0118	PLATE,EARTH-SYSCON		
118	712WPJB210	FLAP		
119	713WPAA049	GLASS LED		
120	752WSA0256	PLATE,POWER SW		
121	755WNA0010	SHEET,PVC		
122	752WSA0191	SHIELD,CASE		
123	735WPBA147	BUTTON,POWER		
124	735WPBA293	BUTTON,FRAME		
125	761WPA0223	HOLDER,FBT		
126	752WSA0149	SHIELD,COVER		
127	743WKAA009	SPRING,FLAP (COMBO)		
128	A58607V740	CABINET,BACK ASS'Y		
129	702WPAA197	CABINET,BACK		
130	761WPA0217	HOLDER,DECK		
131	753WSA0120	PLATE,BOTTOM-EARTH		
201	8110330A04	SCREW,TAP TITE(P)	FLAT	3x10
202	8117540B04	SCREW,TAPPING(B0)	TRUSS	4x20
203	8117540A64	SCREW,TAPPING(B0)	TRUSS	4x16
204	8117140A24	SCREW,TAPPING(B0)	PAN	4x12
205	8107930604	SCREW,CUP(S)		3x6
206	8110630A24	SCREW,TAP TITE(P)	BRAZIER	3x12
207	8110630A04	SCREW,TAP TITE(P)	BRAZIER	3x10
208	8107230804	SCREW,TAP TITE(S)	BIND	3x8
209	8110630604	SCREW,TAP TITE(P)	BRAZIER	3x6
210	8110330804	SCREW,TAP TITE(P)	FLAT	3x8
211	8109I30A04	SCREW,TAP TITE(B)	WH7	3x10
212	8109630802	SCREW,TAP TITE(B)	BRAZIER	3x8
213	810A130504	SCREW/WASHER(A)		M3x5
214	8107226604	SCREW,TAP TITE(S)	BIND	2.6x6
215	8107630604	SCREW,TAP TITE(S)	BRAZIER	3x6
216	810A130B04	SCREW/WASHER(A)		M3x20
217	8121J50B54	SCREW,TAPPING(B0)	GW20	5x28
---	791MHA0004	LAMIFILM BAG		
---	A58607V975	INSTRUCTION BOOK KIT		
---	792UHA0147	PACKAGE,TOP		
---	792UHA0148	PACKAGE,BOTTOM		
---	793UCDA838	GIFT BOX		
---	JB5X0200	POLYBAG		
---	J5860701	INSTRUCTION BOOK		
---	J5860702	GUARANTEE CARD		

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
300	A57056A420A	DECK ASSY	A57056A420A	501	8107126A04	SCREW,TAP TITE(S) PAN	2.6x10
				502	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
301	85OA500022	AHC ASS'Y		503	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
302	85OP200290	BELT,CAPSTAN (S)		504	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
303	85OP900710	LEVER,REC		505	810A126804	SCREW/WASHER(A)	M2.6x8
304	85OP500083	BASE,AC HEAD		506	810B126404	SCREW/WASHER(B)	M2.6x4
305	85OP800324	SPRING,AC HEAD		507	8102120604	SCREW,PAN	M2x6
306	85OA000367	MAIN CHASSIS ASS'Y (S-Z)		508	8102120304	SCREW,PAN	M2x3
307	85OA200082	CLUTCH ASS'Y(S2)		509	8102130304	SCREW,PAN	M3.0x3.0
308	85OA200080	ARM IDLER ASS'Y (S)					
309	85OP600556	ARM,SS BRAKE (S)		510	810A123504	SEMS A	M2.3x5.0
				511	82P266005N	POLYSLIDER WASHER(CUT)	2.6x6.0xT0.5
310	85OP200292	REEL,T (S)		512	82Q2647C5N	POLYSLIDER WASHER	2.6x4.7xT0.25
311	85OA300061	LOADING ARM S ASS'Y		513	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
312	85OA300062	LOADING ARM T ASS'Y		514	83ETW30000	E-RING	3
313	85OA400214	GUIDE ROLLER ASS'Y 1.3		515	810A126504	SCREW/WASHER(A)	M2.6x5
314	85OA400188	BASE,INCL S ASS'Y					
315	85OA400196	BASE,INCL T(S) ASS'Y		CP101	069R740018	CONNECTOR PCB SIDE	52044-0445
316	85OA400199	P5-3 ARM ASS'Y(S)		H5001	1523D91034	HEAD (AUDIO CONTRCL)	HVMXA1072A
317	85OA400205	PINCH ROLLER BLOCK		H5002	1543D02013	HEAD (FULL ERASE)	HVFHP0032A
318	85OA400175	TENSION ARM ASS'Y		⚠ M101	1596P78001	MOTOR (LOADING)	MXN13FB11H
319	85OA400184	TENSION BAND ASS'Y (S)		⚠ M2001	1594J98009	CAPSTAN DD UNIT	EP15BD
				M2003	1589V11007	MICRO MOTOR	EP14BD
320	85OA400178	PINCH ROLLER LEVER ASS'Y		PCB550	A4C8318550	DECK PCB ASS'Y	VE8851
321	85OA600196	BRAKE T ASSY(S)		Q101	0000700320	TRANSISTOR,PHOTO	RPT-38PB113
322	85OA600191	CAP BRAKE ASS'Y(S)		⚠ UN4001	A4C606A500	CYLINDER UNIT ASSY	A4C606A500
323	85OA900213	LINK ASS'Y					
324	85OA900216	LINK LEVER ASS'Y					
325	85OP200284	LEVER,CLUTCH (S)					
326	85OP200285	ACTUATOR,CLUTCH					
327	85OP200298	GEAR,COUPLING(S2)					
328	85OP200291	REEL,S (S)					
329	85OP600541	WORM					
330	85OP600563	BRACKET MOTOR					
331	85OP300193	GEAR,MAIN LOADING					
332	85OP300179	GEAR,LOADING S					
333	85OP300180	GEAR,LOADING T					
334	85OP300187	HOLDER,LOADING GEAR (S-Z)					
335	85OP400472	ADJUST,TENSION					
336	85OP400492	HOLDER,TENSION					
337	85OP400490	LEVER,TENSION					
338	85OP400475	COVER,P4					
339	85OP600543	GEAR,JOINT					
340	85OP600544	GEAR,MIDDLE					
341	85OP600554	CAM,MAIN (S)					
342	85OP600546	CAM P5					
343	85OP600565	CAM,PINCH ROLLER					
344	85OP600561	ROD,MAIN(S)					
345	85OP700035	REFLECTOR,LED					
346	85OP800318	SPRING LOADING GEAR					
347	85OP800334	SPRING,P5 (S)					
348	85OP800335	SPRING,BRAKE T (S)					
349	85OP800322	SPRING,TENSION					
350	85OP800336	SPRING,CAP BRAKE (S)					
351	85OP800342	SPRING,LOCKER (S)					
352	85OP800326	SPRING,LINK					
353	85OP800328	SPRING,DAMPER					
354	85OP800330	SPRING,RING					
355	85OP800337	SPRING,SS BRAKE (S)					
356	85OP900680	OPENER,CASS					
357	85OP900731	CASS SIDE L(VA)					
358	85OP900732	CASS SIDE R					
359	85OP900728	TAPE GUIDE L(P.R)					
360	85OP900729	TAPE GUIDE R					
361	85OP900714	COVER SENSOR L3					
362	85OP900688	LEVER,FLAP					
363	85OP900690	CASS HOLDER					
364	85OP600540	DRIVER,WORM					
365	85OP900713	LOCKER,R2					
366	85OP900694	SPRING,PACK					
367	85OP900695	BRACKET,TOP					
368	85OP900696	SPRING,CASS EARTH					
369	85OP800341	SPRING,P/R ARM					

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
R350	R3X18A2R2J	R,METAL OXIDE	2.2 OHM 2W
⚠ R447	R635U2680J	R,FUSE	68 OHM 1/2W
⚠ R449	R5X2CE682J	R,CEMENT	6.8K OHM 7W
⚠ R450	R6558A2R2J	R,FUSE	2.2 OHM 2W
⚠ R501	R5Y2CE2R2J	R,CEMENT	2.2 OHM 7W
R505	R3X28B273J	R,METAL	27K OHM 3W
R508	R001T6105J	RC	1M OHM 1/6W
⚠ R512	R3X181223J	R,METAL OXIDE	22K OHM 1W
R517	R6558A2R2J	R,FUSE	2.2 OHM 2W
R538	R011K2155J	RC	1.5M OHM 1/2W
⚠ R542	R3X181R33J	R,METAL OXIDE	0.33 OHM 1W
⚠ R543	R635U2681J	R,FUSE	680 OHM 1/2W
R683	R002T2391J	RC	390 OHM 1/2W
⚠ R802	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R805	R3X18A153J	R,METAL OXIDE	15K OHM 2W
⚠ R810	R3X18A153J	R,METAL OXIDE	15K OHM 2W
R1005	R615J12R7J	R,FUSE	2.7 OHM 1W
R4058	R002T4821J	RC	820 OHM 1/4W
R4066	R002T4470J	RC	47 OHM 1/4W
		CAPACITORS	
C357	E02LT3102M	CE	1000 UF 25V
C401	E0ELTB220M	CE	22 UF 160V
C407	E62I03122M	CE	1200 UF 25V
C421	E5EZ04102M	CE	1000 UF 35V
C423	P411F3474J	CMPP	0.47 UF 250V ECWF
C424	P414F9682H	CMPP	0.0068UF 1.6KV ECWH
C425	C0390R7G3K	CC	0.0018UF 2KV R
C431	E0ELFD220M	CE	22 UF 250V
C502	C13HB07H3K	CC	0.0022UF 2KV B
C503	C13HB07H3K	CC	0.0022UF 2KV B
⚠ C505	P2122B224M	CMP	0.22 UF 250V ECQUL
⚠ C506	P2122B104M	CMP	0.1 UF 250V ECQUL
⚠ C507	E52C0H101M	CE	100 UF 400V
C514	C0JLYR7H3K	CC	0.0022UF 2KV YR
C517	C0JLYR713K	CC	0.001 UF 2KV YR
C520	E5EZT2102M	CE	1000 UF 16V
C521	E53VFB221M	CE	220 UF 160V
C522	E5EZT54R7M	CE	4.7 UF 50V
C523	E5EZT3102M	CE	1000 UF 25V
C524	E5EZT3102M	CE	1000 UF 25V
C525	E02LT3471M	CE	470 UF 25V
C527	C0JLYR7Q2K	CC	470 PF 2KV YR
⚠ C529	CB3930MH3M	CC	0.0022UF 250V
⚠ C530	CB3930M13M	CC	0.001 UF 250V
C683	CHG0CH4H1J	CC	22 PF 50V CH or
	CHGTCH4H1J	CC	22 PF 50V CH
C801	C13HB07H3K	CC	0.0022UF 2KV B
C819	C13HB07H3K	CC	0.0022UF 2KV B
C1003	E51XWP104Z	CE	0.1 F 5.5V
		DIODES	
D401	D2WT011E10	DIODE SILICON	11E1-EIC
D410	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠ D411	D2LTPG06J0	DIODE SILICON	RMPG06J-G3 or
	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D413	D2LTPG06J0	DIODE SILICON	RMPG06J-G3 or
	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D501	D4LZBL06L0	DIODE	GBL06L-6177
D502	D2BT0EG01C	DIODE,RECTIFIER	EG-01C
⚠ D505	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D506	D2LTPG06J0	DIODE SILICON	RMPG06J-G3 or
	D28T10ELS6	DIODE,RECTIFIER	10ELS6TA1B2
⚠ D508	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
⚠ D509	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D510	D2BTRU2AM0	DIODE SILICON	RU2AM V1
⚠ D511	D28TELS2N2	DIODE RECTIFIER	10ELS2N-TA1B2
⚠ D512	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D515	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D516	D1VT001330	DIODE,SILICON	1SS133T-77
D517	D2BT0EG01Z	DIODE,SILICON	EG01Z-V0
D518	D2BT0EG01Z	DIODE,SILICON	EG01Z-V0
⚠ D519	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D521	D2BT0EG01Z	DIODE,SILICON	EG01Z-V0
D523	D1VT001330	DIODE,SILICON	1SS133T-77
D524	D1VT001330	DIODE,SILICON	1SS133T-77
D526	D1VT001330	DIODE,SILICON	1SS133T-77
D527	D1VT001330	DIODE,SILICON	1SS133T-77
D528	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77

REF. NO.	PART NO.	DESCRIPTION	
		DIODES	
D529	D1VT001330	DIODE,SILICON	1SS133T-77
D530	D1VT001330	DIODE,SILICON	1SS133T-77
D531	D2BTRU2YX0	DIODE SILICON	RU2YX-V1
D533	D1VT001330	DIODE,SILICON	1SS133T-77
D534	D1VT001330	DIODE,SILICON	1SS133T-77
D601	D1VT001330	DIODE,SILICON	1SS133T-77
D604	D28T11ESN1	DIODE SILICON	11ES1N-TA1B2
D605	D1VT001330	DIODE,SILICON	1SS133T-77
D606	D1VT001330	DIODE,SILICON	1SS133T-77
D608	D1VT001330	DIODE,SILICON	1SS133T-77
D609	D1VT001330	DIODE,SILICON	1SS133T-77
D610	D1VT001330	DIODE,SILICON	1SS133T-77
D611	D1VT001330	DIODE,SILICON	1SS133T-77
D612	D1VT001330	DIODE,SILICON	1SS133T-77
D791	002132Q130	LED	SLZ-936C-07-S-T1
D792	002132Q130	LED	SLZ-936C-07-S-T1
D793	002132Q130	LED	SLZ-936C-07-S-T1
D851	D1VT001330	DIODE,SILICON	1SS133T-77
D852	D1VT001330	DIODE,SILICON	1SS133T-77
D854	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D855	D1VT001330	DIODE,SILICON	1SS133T-77
D856	D1VT001330	DIODE,SILICON	1SS133T-77
D857	D1VT001330	DIODE,SILICON	1SS133T-77
D858	D1VT001330	DIODE,SILICON	1SS133T-77
D859	D1VT001330	DIODE,SILICON	1SS133T-77
D860	D1VT001330	DIODE,SILICON	1SS133T-77
D861	D1VT001330	DIODE,SILICON	1SS133T-77
D863	D28TQS04N0	DIODE SCHOTTKY	11EQS04N-TA1B2
D1001	D2LXE65800	DIODE SILICON	1N4005E-6580-G23
D1002	D1VT001330	DIODE,SILICON	1SS133T-77
D1003	0010C00090	INFRARED LED	TSAL7200ASZ
D1004	D2LXE65800	DIODE SILICON	1N4005E-6580-G23
D1005	D92T1120B0	DIODE ZENER	RD12FB-T7
D1006	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D1007	D1VT001330	DIODE,SILICON	1SS133T-77
D1008	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D1009	D1VT001330	DIODE,SILICON	1SS133T-77
D1010	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D1011	D1VT001330	DIODE,SILICON	1SS133T-77
D1012	D1VT001330	DIODE,SILICON	1SS133T-77
D1014	D1VT001330	DIODE,SILICON	1SS133T-77
D1015	D1VT001330	DIODE,SILICON	1SS133T-77
D1016	D1VT001330	DIODE,SILICON	1SS133T-77
D1017	D1VT001330	DIODE,SILICON	1SS133T-77
D1018	D28TQS04N0	DIODE SCHOTTKY	11EQS04N-TA1B2
D1019	D28TQS04N0	DIODE SCHOTTKY	11EQS04N-TA1B2
D1022	D1VT001330	DIODE,SILICON	1SS133T-77
D1023	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D4003	D1VTB721Q0	DIODE SCHOTTKY	RB721Q-40 T-77
D4202	D28T11ESN1	DIODE SILICON	11ES1N-TA1B2
D4503	D1VT001330	DIODE,SILICON	1SS133T-77
D4510	D1VT001330	DIODE,SILICON	1SS133T-77
D4511	D1VT001330	DIODE,SILICON	1SS133T-77
		ICS	
IC352	I0FSP75230	IC	AN7523
⚠ IC401	I01SD5539N	IC	AN5539N
⚠ IC501	I2BT067070	IC	STR-F6707
⚠ IC506	000210001R	PHOTO COUPLER	ON3171R
IC601	I03DE68120	IC	LA76812
IC851	ICKD001060	IC	ET106
IC852	ICKD003170	IC	ET317
IC853	I55JM4053A	IC	TC74HC4053AF
IC1001	I07SQ69550	IC	BA6955N
IC1002	IE1J0S31AH	IC	RE5VS31A
IC1003	I1KA97809A	IC	KIA7809API
IC1004	I1KA97805A	IC	KIA7805API
IC1005	I1KA97805A	IC	KIA7805API
IC1006	I54F50094B	IC	OEC0094B
IC1099	A58607V015	IC	S-24C08ADPA-01
IC4001	I04F38217F	IC	HA118217F
		TRANSISTORS	
Q351	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q353	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q405	TC3Q026210	TRANSISTOR,SILICON	2SC2621(D,E)-RAC
⚠ Q406	TDUF024990	TRANSISTOR SILICON	2SD2499
Q501	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA
Q502	TA3T1371A0	TRANSISTOR,SILICON	2SA1371(D,E)-AE

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		TRANSISTORS	
Q503	TA3T1371A0	TRANSISTOR,SILICON	2SA1371(D,E)-AE
Q504	TC5T018154	TRANSISTOR,SILICON	2SC1815Y(TPE2)
Q505	TC3T029090	TRANSISTOR,SILICON	2SC2909(S,T)-AA
Q507	TCST009450	TRANSISTOR,SILICON	2SC945(C)-T(P,Q)
Q508	TB3T008920	TRANSISTOR,SILICON	2SB892(S,T)-AE
Q509	TNYTJ03001	COMPOUND TRANSISTOR	DTC114TSTP
Q513	TNYTB03001	COMPOUND TRANSISTOR	DTC114ESTP or
	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT
Q601	TC3T030000	TRANSISTOR,SILICON	2SC3000-AA
Q602	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q603	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q604	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q605	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q608	TAYT0933S0	TRANSISTOR,SILICON	2SA933STP(R,S)
Q609	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q610	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q612	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146
⚠ Q804	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC or
	TCA0042170	TRANSISTOR SILICON	KTC4217(O,Y)
⚠ Q805	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC or
	TCA0042170	TRANSISTOR SILICON	KTC4217(O,Y)
⚠ Q806	TC3F042170	TRANSISTOR,SILICON	2SC4217(D,E)-RAC or
	TCA0042170	TRANSISTOR SILICON	KTC4217(O,Y)
Q851	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q852	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q853	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q855	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q856	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q862	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q863	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1001	0002700590	PHOTO COUPLER	RPI-301
Q1002	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1003	0002700530	PHOTO COUPLER	RPI-352Q01R
Q1004	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q1005	0002700590	PHOTO COUPLER	RPI-301
Q1006	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q1007	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146
Q1008	TNYJJ05001	COMPOUND TRANSISTOR	DTC114TKAT146
Q1009	0002700530	PHOTO COUPLER	RPI-352Q01R
Q1010	TD3T007340	TRANSISTOR,SILICON	2SD734(E,F)-AA or
	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q1011	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1014	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1015	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1016	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q1017	0000100380	PHOTO TRANSISTOR	PNA2604M010R
Q1018	TB3T008920	TRANSISTOR,SILICON	2SB892(S,T)-AE
Q1019	TB3T008920	TRANSISTOR,SILICON	2SB892(S,T)-AE
Q1020	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146
Q1021	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4001	TD3T007340	TRANSISTOR,SILICON	2SD734(E,F)-AA or
	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q4002	TD3T007340	TRANSISTOR,SILICON	2SD734(E,F)-AA or
	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q4003	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q4004	TCWT022740	TRANSISTOR,SILICON	2SC2274(E,F)-AA or
	TCATC0200Y	TRANSISTOR SILICON	KTC200_Y-AT
Q4005	TCWT022740	TRANSISTOR,SILICON	2SC2274(E,F)-AA or
	TCATC0200Y	TRANSISTOR SILICON	KTC200_Y-AT
Q4006	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4007	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4009	TNYTC03001	COMPOUND TRANSISTOR	DTC124ESTP
Q4010	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4201	TNYTB05001	COMPOUND TRANSISTOR	DTC114EKT147
Q4501	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4502	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q4505	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4507	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4509	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4510	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4511	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q4512	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
		COILS &TRANSFORMERS	
L004	02AHA896A1	CORE,FERRITE	W5T18.4X10X9.6
L005	02AHA896A1	CORE,FERRITE	W5T18.4X10X9.6
L401	021679472K	COIL	4.7 MH
⚠ L501	029K000001	COIL,LINE FILTER	RB-20871

REF. NO.	PART NO.	DESCRIPTION	
		COILS &TRANSFORMERS	
⚠ L502	029T000094	COIL,LINE FILTER	0R7A223F24Y
⚠ L503	028H200015	COIL,DEGAUSS	8H200015
L600	02AXB9A971	CORE FERRITE	ESD-R-30SD
L601	02167D101K	COIL	100 UH
L603	021LA6150K	COIL	15 UH
L604	021LA6R27M	COIL	0.27 UH
L605	02167D101K	COIL	100 UH
L606	021LA62R2K	COIL	2.2 UH
L608	033600042	COIL,VIDEO IFT	3600042
L609	02167D101K	COIL	100 UH
L610	021L962R7K	COIL	2.7 UH or
	021LA62R7K	COIL	2.7 UH
L851	021673100K	COIL	10 UH
L852	021673100K	COIL	10 UH
L854	021673101K	COIL	100 UH
L1001	021LA6120K	COIL	12 UH
L4001	0326230038	COIL,TRAP	2623003
L4002	02167D101K	COIL	100 UH
L4003	02167D101K	COIL	100 UH
L4004	02167D101K	COIL	100 UH
L4005	0316260088	COIL,BIAS OSC	1626008
L4006	02167D102K	COIL	1 MH
L4008	021673102K	COIL	1 MH
L4009	02167D101K	COIL	100 UH
L4011	021LA6120K	COIL	12 UH
L4012	021LA6221K	COIL	220 UH
L4013	02167D101K	COIL	100 UH
L4015	02167D101K	COIL	100 UH
L4016	021LA6390K	COIL	39 UH
L4020	021LA6100K	COIL	10 UH
L4021	021LA6100K	COIL	10 UH
L4022	021LA6100K	COIL	10 UH
L4501	021673101K	COIL	100 UH
L4502	021673101K	COIL	100 UH
L4503	021LA6100K	COIL	10 UH
L4504	021LA6100K	COIL	10 UH
T401	03305Y002S	TRANS,HORIZONTAL DRIVE	305Y002
T501	048140062W	TRANSFORMER,SWITCHING	8140062W
		JACKS	
⚠ J351	060G131014	RCA JACK	HTJ-035-28A
J701	060Q401075	RCA JACK	AV2-24D-5
⚠ J801	066C130015	SOCKET,CATHODE RAY TUBE	CVT3275-5102
J4501	063G100037	SOCKET,21PIN	035_0_9985_05
		SWITCHES	
⚠ SW501	0530205001	SWITCH PLUS	SDDFC30200
SW1001	0508221001	SWITCH (LEAF)	SPVF130100
SW1002	0504101T34	SWITCH,TACT	EVQ21505R
SW1004	0504101T34	SWITCH,TACT	EVQ21505R
SW1005	0504101T34	SWITCH,TACT	EVQ21505R
SW1006	0504101T34	SWITCH,TACT	EVQ21505R
SW1007	0504101T34	SWITCH,TACT	EVQ21505R
SW1008	0504101T34	SWITCH,TACT	EVQ21505R
SW1009	0504101T34	SWITCH,TACT	EVQ21505R
SW1010	0504101T34	SWITCH,TACT	EVQ21505R
SW1011	0504101T34	SWITCH,TACT	EVQ21505R
SW1012	0504101T34	SWITCH,TACT	EVQ21505R
		VARIABLE RESISTOR	
VR502	V1163L2BTC	VOLUME,SEMI FIXED	EVNCYAA03BY2
		P.C.BOARD ASSEMBLIES	
PCB010	A58607V010K	PCB ASS'Y	VMX193F
PCB030	A58607V030K	PCB ASS'Y	TE9A16A
PCB070	A58607V070K	PCB ASS'Y	TMX470A
PCB110	A58607V110K	PCB ASS'Y	TCX331A
PCB340	A58607V340K	PCB ASS'Y	TEXA35A
PCB550	A4C831B550	SEE CHASSIS REPLACEMENT PARTS LIST	
		MISCELLANEOUS	
B401	024AT03655	CORE BEADS	BL01RN1-A63T6
B403	024AT03655	CORE BEADS	BL01RN1-A63T6
B504	024AT03655	CORE,BEADS	BL01RN1-A63T6
B505	024A8407C3	CORE,BEADS	BL02RN2-R62T2
B851	024DT03581	CORE BEADS	LFP3A-M3R2TA
B4001	024AT03481	CORE,BEADS	BL02RN1-R62T2
B4501	024AC3601C	CORE,BEADS	BLM21A601SPT
B4502	024AC3601C	CORE,BEADS	BLM21A601SPT
BT001	1412004008	BATTERY,MANGAN	R03(AB)E_20_T
BT002	1412004008	BATTERY,MANGAN	R03(AB)E_20_T
CD351	06CH274101	CORD CONNECTOR	CH274101

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		MISCELLANEOUS		
CD352	06CH25088A	CORD CONNECTOR	CH25088A	
⚠ CD501	1206655820	CORD AC	1206655820	
CD502	06CPU2012A	CORD CONNECTOR	CPU2012A	
CD653	06CH01408A	CORD EIS CONNECTOR	CH01408A	
CD654	06CH01388A	CORD EIS CONNECTOR	CH01388A	
CD801	127C210009	BRAIDED WIRE	TD-060800	
CD803	122E054402	CORD JUMPER	2E054402	
CD810	06CH28096A	CORD CONNECTOR	CH28096A	
CD850	06CH25086A	CORD CONNECTOR	CH25086A	
CF601	1022T38R9E	FILTER,SAW	SAF38.9MAK220Z	
CF602	1012T04001	FILTER,CERAMIC TRAP	MKT40.4MA110P-TF	
CP302	069X120249	CONNECTOR PCB SIDE	B2B-EH-A	
CP351	0694270139	CONNECTOR PCB SIDE	173979-7	
CP401	069W340018	CONNECTOR PCB SIDE	TS-80P-04-V1	
CP501	0697320039	CORD UX CONNECTOR	THL-P03P-B1	
CP502	06CH2D068A	CORD CONNECTOR	CH2D068A	
CP502	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1	
CP504	0697320039	CORD UX CONNECTOR	THL-P03P-B1	
CP603	069E290129	CONNECTOR PCB SIDE	8283_0912_00_000	
CP757	069E250129	CONNECTOR PCB SIDE	8283_0512_00_000	
CP801	069W320018	CONNECTOR PCB SIDE	TS-80P-02-V1	
CP804	069W01001A	CONNECTOR PCB SIDE	003P-2100	
CP810	069E280129	CONNECTOR PCB SIDE	8283_0812_00_000	
CP820	069E2D0129	CONNECTOR PCB SIDE	8283_1312_00_000	
CP850	069E250129	CONNECTOR PCB SIDE	8283_0512_00_000	
CD1001	122S040804	CORD JUMPER	1.25X4X83XC	
CD1003	122F051704	CORD JUMPER	2F051704	
CD4001	122S061401	CORD JUMPER	1.25X6X138XC	
CP1004	0697280590	CONNECTOR PCB SIDE	TMC-J08P-B1	
CP1005	069J750029	CONNECTOR PCB SIDE	IMSA-9604S-05Z14	
CP1006	069J740029	CONNECTOR PCB SIDE	IMSA-9604S-04Z14	
CP4001	0697240600	CONNECTOR PCB SIDE	TOC-C04X-B1	
CP4004	0697120320	CONNECTOR PCB SIDE	TMC-T02X-E1	
CP4005	069J760029	CONNECTOR PCB SIDE	IMSA-9604S-06Z14	
CP803A	067R105019	WIRE HOLDER	51052-0500	
CP803B	067R105019	WIRE HOLDER	51052-0500	
CUS011	800WFAA006	CUSHION A		
CUS011	800WFAA006	CUSHION A		
CUS012	800WFAA006	CUSHION A		
CUS013	800WFAA008	CUSHION C		
⚠ F501	0808T04002	FUSE	218004	
⚠ F502	0808T1R602	FUSE	21801.6	or
	080NT1R603	FUSE	50T016HCC	
FB401	043221012F	TRANSFORMER,FLYBACK	3221012F	
FH501	06710T0008	HOLDER,FUSE	EYF-52BC	
FH502	06710T0006	HOLDER,FUSE	EYF-52BC	
FH503	06710T0006	HOLDER,FUSE	EYF-52BC	
FH504	06710T0006	HOLDER,FUSE	EYF-52BC	
⚠ ICP502	083PC05002	MICRO FUSE	251005	
OS1001	0779014002	REMOTE RECEIVER	GP1U281Q	
⚠ RY501	0560Q20114	RELAY	SDT-S-112LMR	or
	0560V20115	RELAY	ALKS321	
SP351	070W133015	SPEAKER	P-300S-3-6	
TH501	D8R0A140M0	DEGAUSS ELEMENT	PTH451A140M21	
TM101	07660CH030	TRANSMITTER	SBJU00010A	
⚠ TU601	0145511021	TUNER,VHF-UHF	TUWOF4EG-771F2	
⚠ V801	098A210431	CRT W/DY	A51KQK99X01	
X601	100CT4R406	CRYSTAL HC-49/U	4.433619MHz	
X851	100CT01302	CRYSTAL HC-49/U-S	13875KHz	
X1001	100CT01002	CRYSTAL HC-49/U-S	10MHz	
X1002	100C32R803	CRYSTAL DSVT-200	32.768KHz	
X4001	100CT4R407	CRYSTAL HC-49/U	4.433619MHz	

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

SPEC.NO.	M586-07V
O/R NO.	U1X5508